

THE ORB-WEAVER GENUS *MANGORA* OF MEXICO, CENTRAL AMERICA, AND THE WEST INDIES (ARANEAE: ARANEIDAE)

HERBERT W. LEVI¹

ABSTRACT. Thirty-two species of *Mangora* are found in the region under consideration. Three temperate species extend their ranges into northern Mexico, three Mexican species extend into the Southwest, and four species extend into South America. Only one species, *M. melanocephala* from Central America and South America, is both widespread and common. One species is found in the West Indies, including Trinidad. Of the 32 species, 15 are new. Six new synonyms are found. A few synapomorphies place *Mangora* close to *Araneus*.

INTRODUCTION

At present, Mexican and Central American *Mangora* can be determined only with the 1894–1904 publications of O. P. and F. O. P.-Cambridge in the *Biologia Centrali-Americana* (on Guatemalan spiders mostly, but including some from Tabasco, Mexico), and Chickering's two papers (1954, 1963) on Panamanian *Mangora*. They deal with only a small part of the region. *Mangora* of most of the region remain unknown and undetermined collections have accumulated in museums. The inability to recognize species of the region has limited needed work on ecology, behavior, and physiology of the genus. *Mangora pia* was used by Craig (1987a,b, 1988, 1989) for her observations on behavior and structure of silk.

Distinctiveness of most South American *Mangora* species make it advisable to publish on the species of Mexico, Central America, and the West Indies (excluding Trinidad) and to deal with the many species of Trinidad and South America sepa-

ately. The astonishing abundance of tropical South American *Mangora* species, mostly undescribed, may make this the most species-rich genus of araneids in the Americas.

METHODS

Preserved *Mangora* specimens are more fragile than other araneid specimens. It is nearly impossible to avoid breaking leg macrosetae when handling. For examination, specimens were placed on a substrate such as black paraffin with suitable depressions, black silicon carbide crystals (80 grit), or black Velcro tape glued to a dish. The black background minimizes reflections.

Description. Alcoholic specimens were used to describe coloration even though many have some bright coloration that washes out. No color slides were available to show the color when alive.

Eyes. Eyes in araneids are difficult to measure because the curved cornea extends beyond the eye as seen from above. Thus, eyes seen from the side appear larger than when viewed from above. There also is individual variation in eye placement. Eye measurements are rough estimates.

The line of posterior eyes was checked against an imagined line behind the eyes when viewing the eyes dorsally. An imaginary line outside of the eyes, when seen from above, defined the median eye trapezoid. Despite the difficulty in measuring, numerical sizes and distances are given. Approximations are easier to describe in numbers than in words.

¹ Museum of Comparative Zoology, Harvard University, 26 Oxford Street, Cambridge, Massachusetts 02138-2902. E-mail: levi@fas.harvard.edu

Measuring. Total length was measured without stretching the animal, whose elongate abdomen hangs at an angle with the prosoma (Levi, 1975, fig. 59; 2002, fig. 2). Length of body parts and leg articles are accurate only to 0.1 mm because legs were not amputated and leveled for measurements.

Figures. Figures of holotypes of species north of Mexico were made in 1970 (Levi, 1975). Here, the tips of palpi are additionally illustrated, perhaps making them easier to determine without amputating the structure. The apical view also helps to distinguish relationship of the complicated sclerites without expanding the palpus.

The ventral view of epigyna is often illustrated from slightly anterior. Lifting the epigynum with a needle or folding it back exposed the posterior view. The epigyna were cleared with Hoyer's medium. Individual specimens of *Mangora* less than 2.5 mm in total length were submerged in the clearing medium. In larger specimens, the epigynum was removed and cleared for examination and later stored in a small vial with the rest of the specimen.

The directions for locating structures in the illustrations (h) refer to the numbers in the face of a clock.

Maps. Maps were made with a computer. Collecting sites were located with various automobile maps and the gazetteers of the United States Board on Geographic Names (1956, 1965), Office of Geography, Department of the Interior. A gazetteer of the localities of the Cambridges' types is given by Selander and Vaurie (1962). Collectors of specimens often published maps of their collecting sites (e.g., Goodnight and Goodnight, 1953; Petrunkevitch, 1909; Vaurie and Vaurie, 1949).

Specimens Used. Specimens used came from the following collections and individuals:

AD A. Dean, Texas A&M University, College Station, Texas, United States
AMNH American Museum of Natural

History, New York United States; W. J. Gertsch, J. A. L. Cooke, N. Platnick
BMNH Natural History Museum, London, United Kingdom; P. Hilliard, J. Beccaloni
CAS California Academy of Sciences, San Francisco, California, United States; C. Griswold, D. Ubick
CNC Canadian National Collections, Ottawa, Ontario, Canada; C. Dondale
CUC Cornell University Collection kept in the AMNH
ECOSUR ECOSUR Collection, Chetumal, Quintana Roo, Mexico; G. Alayón
FSCA Florida State Collection of Arthropods, Gainesville, Florida, United States; G. B. Edwards
HEF The late Harriet Exline Frizzell, W. Peck, kept in CAS
JM J. M. Maes, León, Nicaragua
MCZ Museum of Comparative Zoology, Cambridge, Massachusetts, United States; G. Giribet
MIUP Museo de Invertebrados, Universidad de Panamá, Panamá Panamá; D. Quintero A.
MNHN Museum National d'Histoire Naturelle, Paris, France; M. Hubert, C. Rollard
NMB Naturhistorisches Museum, Basel, Switzerland; E. Sutter, A. Hänggi
PAN Polish Academy of Science, Warsaw, Poland; J. Proszynski, A. Slojewska
REL Robin E. Leech, Edmonton, Alberta, Canada
SMF Senckenberg Museum, Frankfurt am Main, Germany; M. Grasshoff
USNM National Museum of Natural History, Washington, D.C., United States; J. Coddington

TAXONOMIC SECTION

Mangora O. P.-Cambridge

Mangora O. P.-Cambridge, 1889: 13. Type species: *Mangora picta* O. P.-Cambridge from Guatemala, designated by Simon, 1895: 793. Levi, 1975: 116.

Diagnosis. *Mangora* differs from all other araneid genera by the presence of feathered trichobothria on the tibia of the third leg (unfortunately often broken off in poorly handled specimens) (Levi, 1975, fig. 59; 2002, fig. 2). Easier to observe is the unique shape of the carapace: it is bald and narrow in the eye region, usually only one-half or less of the total width of the carapace, and the thoracic region of the carapace is high, equal to or greater than the width of the carapace in the eye region. The high thoracic region slopes evenly toward the eye region (Levi, 1975, fig. 59; 2002, fig. 2). Unlike most araneids, the abdomen is always oval, longer than wide (Figs. 3, 4, 10). The thin legs have long, strong macrosetae, which stand up, not appressed against the appendage (Levi, 1975, fig. 59; 2002, fig. 2). First legs are subequal in length with the fourth. Discrete black frames of the posterior median eyes (Levi 1975, fig. 58), and the posterior eye row being procurved in some species, further distinguish *Mangora*.

Description of Female. The venter of the female abdomen is often unmarked. The posterior eye row can be straight, recurved, or procurved. The anterior median or posterior median eyes are the largest, the laterals smallest, the posterior laterals always slightly smaller than the anterior. The clypeus height is usually equal to the diameter of the anterior median eyes. The first and fourth legs are subequal in length; the fourth is often thicker than the first. Individual specimens of a species vary in darkness of their coloration.

Description of Male. The male has similar but lighter coloration than the female. The eyes are slightly closer to each other than in the female. The endite tubercle is minute, often hard to see or just a tiny

swelling. The hook on the first coxa is always present; it may be very small and shifted posteriorly.

The male genitalia are surprisingly complex. There is always a radix (R), a median apophysis (M), and a soft conductor (C) holding the tip of the embolus (E) (Figs. 89, 90). The embolus is of variable shape, rarely filiform. The terminal apophysis (A) is complex and of enormous size, with soft and hard lobes, difficult to figure out unless expanded (Figs. 89, 90). The palpal patella has always one strong seta.

Sizes. Many of the tropical *Mangora* are small, females 2.0 to about 7.0 mm total length, males 1.5–4.5 mm. The largest here is *Mangora pia*, found in Panama and observed by Lubin (1978) and used for experiments by Craig (1987–1989).

Relationship. Relationship with *Ara-neus* is suggested by the frequent presence of a scape with a distal pocket in the epigynum of the female (Figs. 62, 97, 110), and in the palpus of the male, the conductor close to the rim, median apophysis with spines (Figs. 89, 90), without a paramedian apophysis, and the presence of a large terminal apophysis. This agrees with the cladogram of Scharff and Coddington (1997).

Distribution. Thirty-two species are found in Mexico and Central America, 15 of them new. Of these 32, 3 temperate species extend their range into northern Mexico (*M. gibberosa*, *M. placida*, and *M. spiculata*) and 3 Mexican species extend into the Southwest (*M. calcarifera*, *M. fascialata*, and *M. passiva*). Four species also are found in South America (*M. amchickeringi*, *M. falconae*, *M. melanocephala*, and *M. pia*; Maps 1, 2). *Mangora melanocephala*, the most common *Mangora*, is also the most widespread, from the Isthmus of Tehuantepec to Peru and Brazil (Map 1E). Only one species, *M. fascialata*, is found in the West Indies excluding Trinidad (Map 2A).

Names. An attempt was made to not use specific names used before in the family.

Distinguishing Characters of Species. For separating *Mangora* species, examination of the color pattern is useful, and it is essential to examine not only the ventral view of the epigynum, but also the posterior view (Figs. 2, 9, 15), by lifting the epigynum with a needle or folding it over. Internal genitalia do not provide good characters to separate species.

Males generally are similar to females in color pattern. Their palpi are so complex that only a slight twist of the palpus provides a different image (Figs. 5–7).

Unrecognizable Species. I start systematic revisions by checking catalogs (Platnick, 2004; Roewer, 1942). According to these catalogs, *Zilla decolorata* Keyserling, 1893, is described from Brazil. I borrowed the holotype from BMNH and found it to be a male collected in Bahia, Brazil, and the type is marked *Zilla decolorata* (C. L. Koch). Koch described a *Zilla decora*, listed in Volume 3 of Bonnet (1961) as *decolorata*, but it comes from Germany and is a synonym of *Mangora acalypha* (Walckenaer, 1802). Although *Zilla decolorata* Keyserling had been placed in *Araneus* and *Zygiella*, the male examined was a *Mangora*.

When working on the Brazilian *Mangora* and checking original literature, I found to my surprise that *Zilla decolorata* was described from a female from Guatemala. Now that I have seen most Central American *Mangora*, I do not recognize it. It is relatively large, total length 5.9 mm, but in Central America, only *Mangora* with a pair of posterior rectangular black spots are this large. Most *Mangora* are smaller. It might be *Chrysometa lancetilla* Levi (Tetragnathidae) but *Chrysometa* has shorter fourth legs than those Keyserling measured for *Zilla decolorata*.

Bonnet (1957) cites Petrunkevitch (1911) as writing that *Z. decolorata* also appears in Brazil, but Petrunkevitch (1911) indicated that it is found in Guatemala. (A line below cites a spider from Brazil.) I consider the name unrecognizable.

KEY TO FEMALE MANGORA

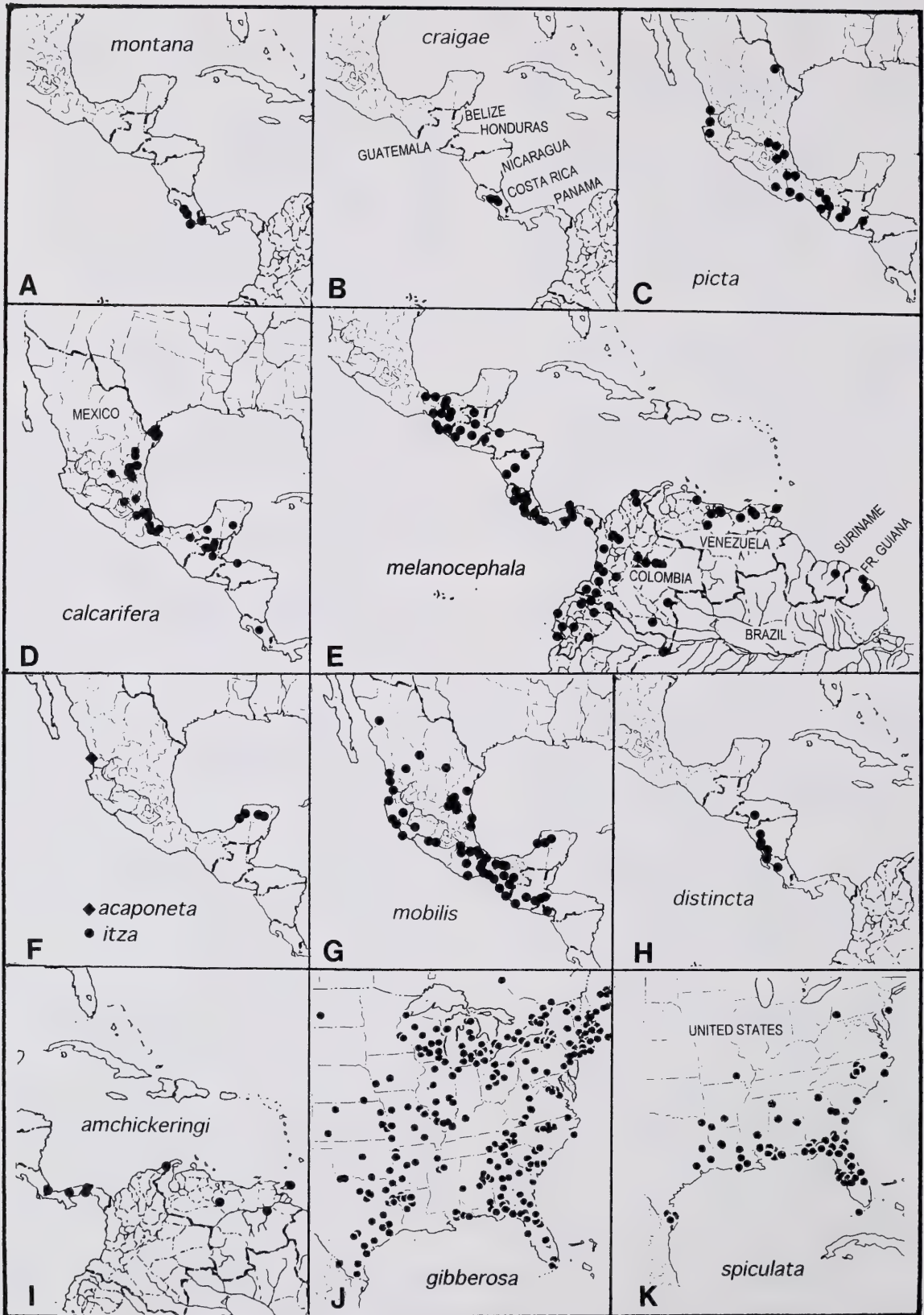
- Female of one species, *M. sufflava*, is not known
- | | | |
|-------|---|----------------------|
| 1 | A black longitudinal line on venter of femora one and two (Fig. 100); abdomen dorsum with two or three lines (Figs. 93, 99) | 2 |
| – | Legs without black longitudinal lines; dorsum at times with lines | 3 |
| 2(1) | In posterior view, epigynum with median plate upside-down T-shaped (Fig. 92); southeastern Canada to Tamaulipas (Map 1J) | <i>gibberosa</i> |
| – | Epigynum with median plate heart-shaped (Fig. 98); Mexico to Honduras, West Indies (Map 2A) | <i>fasciata</i> |
| 3(1) | Abdomen with circular gray or black dots and/or posterior rectangles on whitish (in alcohol) dorsum (Figs. 139, 178, 185) | 4 |
| – | Without circular spots or posterior, black rectangles | 12 |
| 4(3) | One pair of gray spots, plus black rectangles or bands on posterior of whitish (in alcohol) abdomen (Figs. 139, 143) | 5 |
| – | Abdomen with spots only or posterior black rectangles only (Figs. 178, 203) | 6 |
| 5(4) | Epigynum with borders around lateral plates (Fig. 140); Chiapas (Map 2E) | <i>goodnightorum</i> |
| – | Epigynum with lateral plates indistinct (Fig. 136); Campeche (Map 2E) | <i>campeche</i> |
| 6(4) | Abdomen dorsum with circular, black dots (Figs. 178, 185) | 7 |
| – | Abdomen without black dots, posterior with gray or black rectangles, sometimes pairs of lighter rectangles more anterior (Fig. 192) | 8 |
| 7(6) | Abdomen dorsum with a series of black dots (Fig. 178); epigynum as in Figure 175; Yucatan Peninsula to Chiapas (Map 2H) | <i>chicanna</i> |
| – | Abdomen with only one pair of black dots (Fig. 185); epigynum as in Figure 182; Guatemala to Panama (Map 2H) | <i>purulha</i> |
| 8(6) | Epigynum with a posterior, median, oval or angular notch (Figs. 193, 200) | 9 |
| – | Epigynum with a median posterior scape | 10 |
| 9(8) | Notch oval with a median anterior tubercle (Fig. 193); central Mexico to Costa Rica (Map 2I) | <i>bimaculata</i> |
| – | Notch triangular (Fig. 200); Panama to northern South America (Map 2J) | <i>pia</i> |
| 10(8) | Epigynum scape flanked by a semicircular notch on each side (Fig. 189); Costa Rica, Panama (Map 2H) | <i>schneirlai</i> |

- No such notches present 11
- 11(10) Scape a semicircular, short lobe (Fig. 215); in posterior view, median plate flanked by narrow lateral plates (Fig. 216); Costa Rica (Map 2K) *corcovado*
- Scape with base narrower than tip (Fig. 208); posterior median plate upside-down T-shaped (Fig. 209); Panama to Venezuela (Map 2K) *falconae*
- 12(3) Abdomen (in alcohol) all white (Fig. 160), or with a median longitudinal white band flanked by darker lateral bands (Figs. 134, 147) 13
- Abdomen otherwise 15
- 13(12) Abdomen all white (Fig. 160); México, Michoacan (Map 2G) *ixtapan*
- Abdomen with median band flanked by dark lateral bands (Figs. 134, 147) 14
- 14(13) Epigynum with a median oval scape (Fig. 131); Costa Rica, western Panama (Map 2D) *fortuna*
- Epigynum with a small median posterior lobe (Fig. 144); Costa Rica (Map 2E) *vito*
- 15(12) Venter of abdomen posterior to epigynum with a median patch with white pigment spots (Figs. 53, 61, 66, 153) 16
- Venter of abdomen behind epigynum without a median white patch 21
- 16(15) Abdomen dorsum with a pair of upside-down, comma-shaped marks on black (Fig. 152); epigynum as in Figures 148–151; Arizona to Nicaragua (Map 2F) *passiva*
- Abdomen and epigynum otherwise 17
- 17(16) Posterior of epigynum with median plate longer than wide (Fig. 63); Mexico to Honduras (Map 1G) *mobilis*
- Median plate wider than long (Figs. 50, 58) 18
- 18(17) Posterior median plate a narrow transverse band (Fig. 50); Yucatan Peninsula (Map 1F) *itza*
- Posterior median plate not band-shaped (Figs. 58, 72, 81) 19
- 19(18) Posterior median plate with an anterior lobe on each side (Fig. 72); Honduras to Costa Rica (Map 1H) *distincta*
- Median plate without anterior lobes (Figs. 58, 81) 20
- 20(19) Lateral plates in ventral view with a lateral, dark mark on median side of scape (Fig. 57); Nayarit (Map 1F) *acaponeta*
- Lateral plates with dark marks anteriorly (Fig. 80); Costa Rica to northern South America (Map 1I) *amchickeringi*
- 21(15) Epigynum with diagonal duct marks showing through cuticle on each side anterior to median depression (Figs. 20, 22); Texas to Costa Rica (Map 1D) *calcarifera*
- Epigynum lacking these diagonal marks 22
- 22(21) Epigynum with a median scape or posterior lobe or sphere (Figs. 104, 110, 116, 121, 126, 164) 23
- Epigynum without scape or median lobe (Figs. 1, 8, 14, 30) 28
- 23(22) Scape flanked by large depressions (Fig. 164); Panama (Map 2G) *candida*
- Epigynum lacking depressions next to scape 24
- 24(23) Scape flanked by diagonal sclerotized bars (Fig. 110); southeastern Canada to Nuevo León (Map 2B) *placida*
- Epigynum otherwise 25
- 25(24) Scape flanked at some distance by curved, parallel bars (Fig. 104); eastern United States to probably Tamaulipas (Map 1K) *spiculata*
- Epigynum otherwise 26
- 26(25) In posterior view, epigynum sclerotized, and lateral plates with a dorsal lobe (Fig. 117); Oaxaca (Map 2C) *oaxaca*
- In posterior view, lightly sclerotized, lateral plates without a dorsal lobe (Figs. 122, 127) 27
- 27(26) In posterior view, median plate with a pair of ventral, lateral lobes (Fig. 122); México, Veracruz (Map 2C) *nahuatl*
- Posterior median plate without lateral lobes (Fig. 127); western Panama (Map 2D) *volcan*
- 28(22) Epigynum with indistinct median oval cavity, but with distinct, large, oval spermathecae, closer than their length from the margin (Fig. 14); Mexico to Honduras (Map 1C) *picta*
- Epigynum otherwise 29
- 29(28) Spermathecae more than two diameters from posterior border and a flattened, posterior chevron, usually with a median notch or seam (Figs. 30, 34, 39); Veracruz to Brazil and Peru (Map 1E) *melanocephala*
- Spermathecae closer to border, epigynum with different border (Figs. 1, 8) 30
- 30(29) Epigynum with a posterior, sclerotized, slightly wavy border (Fig. 8); Costa Rica (Map 1B) *craigae*
- Epigynum with a straight border (Fig. 1); Costa Rica, Panama (Map 1A) *montana*

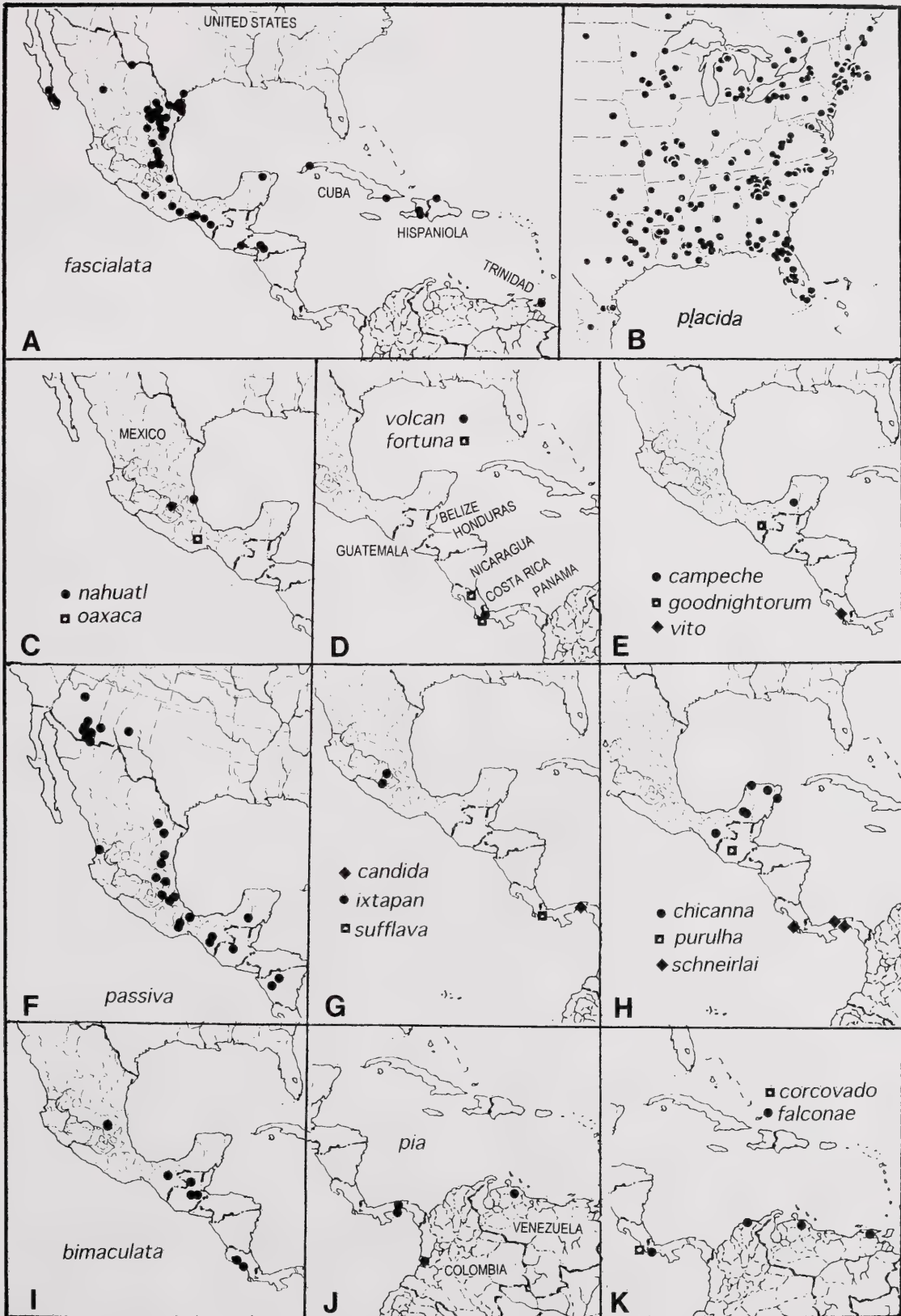
KEY TO MALE MANGORA

Males of nine species (*M. acaponeta*, *M. campeche*, *M. corcovado*, *M. fortuna*, *M. goodnightorum*, *M. nahuatl*, *M. oaxaca*, *M. schneirlai*, and *M. volcan*) are not known

1 A black longitudinal line on venter of



Map 1. Distribution of *Mangora* species.



Map 2. Distribution of *Mangora* species.

	femora one and two (Fig. 100); abdomen dorsum with two or three lines (Figs. 93, 99)	2			
-	Legs without black longitudinal lines	3			
2(1)	Palpus in apical view with a blunt triangular projection (Fig. 96); southeastern Canada to Tamaulipas (Map 1J)				
	..... <i>gibberosa</i>				
-	Palpus, in apical view, with a wide band (Fig. 101); Mexico to Honduras, West Indies (Map 2A)				
	..... <i>fasciata</i>				
3(1)	Macroseta ventrally on proximal end of fourth femur (Figs. 47, 207)	4			
-	Without such macrosetae	6			
4(3)	Small size, less than 2.5 mm total length; palpus with filiform embolus (Figs. 43-45), Veracruz to Brazil and Peru (Map 1E)				
	..... <i>melanocephala</i>				
-	Large size, more than 3 mm total length; palpus otherwise, Panama to northern South America (Maps 2J, K)	5			
5(4)	Palpus, in apical view, with a sclerotized, wide thorn (Fig. 212)				
	..... <i>falconae</i>				
-	Palpus with only a small thorn (Fig. 204; Map 2J)				
	..... <i>pia</i>				
6(3)	Abdomen dorsum with black, circular spots or rectangles posteriorly (Figs. 178, 185, 192)	7			
-	Abdomen otherwise	10			
7(6)	Abdomen dorsum with black or gray circular dots (Figs. 178, 185)	8			
-	Abdomen with black or gray rectangles posteriorly (Fig. 192)	9			
8(7)	Abdomen dorsum with a series of pairs of dots (Fig. 178); palpus as in Figures 179-181; Yucatan Peninsula to Chiapas (Map 2H)				
	..... <i>chicanna</i>				
-	Abdomen dorsum with one pair of dots (Fig. 185); palpus as in Figures 186-188; Guatemala to Panama (Map 2H)				
	..... <i>purulha</i>				
9(7)	Palpus, in apical view, with sickle-shaped structure (Fig. 197); central Mexico to Costa Rica (Map 2I)				
	..... <i>bimaculata</i>				
-	Palpus, in apical view, with drawn-out point (Fig. 173); western Panama (Map 2G)				
	..... <i>sufflava</i>				
10(6)	Left palpus, in apical view, showing embolus with counterclockwise filament (Figs. 5, 11, 17, 26)	11			
-	Apical view otherwise	14			
11(10)	Embolus turns clockwise before reversing direction (Fig. 26); Texas to Costa Rica (Map 1D)				
	..... <i>calcarifera</i>				
-	Embolus turns only counterclockwise (Figs. 5, 11, 17)	12			
12(11)	Terminal apophysis, in apical view, with single, large, sclerotized thorn adjacent to a truncate tip (Fig. 11); Costa Rica				
	..... <i>craigae</i>				
-	Terminal apophysis with only thorn or only truncate tip	13			
13(12)	Terminal apophysis, in apical view, with only a thorn (Fig. 5); Costa Rica, Panama (Map 1A)				<i>montana</i>
-	Terminal apophysis, in apical view, with only a truncate tip (Fig. 17); Mexico to Honduras (Map 1C)				<i>picta</i>
14(10)	Terminal apophysis, in apical view, with a sclerotized, pointed rod (Figs. 67, 76, 85, 89, 154)	15			
-	Terminal apophysis otherwise	20			
15(14)	Rod sword-shaped with one straight and one curved edge (Fig. 154); Arizona to Nicaragua (Map 2F)				<i>passiva</i>
-	Terminal apophysis tip otherwise	16			
16(15)	Rod with right angle (Fig. 161); México, Michoacan (Map 2G)				<i>ixtapan</i>
-	Rod otherwise (Fig. 168)	17			
17(16)	Sword-shaped rod with both sides evenly curved (Fig. 168); Panama (Map 2G)				<i>candida</i>
-	Terminal rod first curved in one direction, distally in another (Figs. 67, 76, 85)	18			
18(17)	In mesal view, median apophysis with evenly curved "top" (Fig. 79); Honduras to Costa Rica (Map 1H)				<i>distincta</i>
-	Median apophysis "top" not so curved (Figs. 70, 88)	19			
19(18)	Both spines of median apophysis almost equal in size; "top" flattened (Fig. 88); Costa Rica to northern South America (Map 1I)				<i>amchickeringi</i>
-	One spine much larger than other; "top" skewed (Fig. 70); México to Honduras (Map 1G)				<i>mobilis</i>
20(14)	Terminal apophysis, in apical view, with thorn and lobe, separated by a notch as in Figure 54; Yucatan Peninsula (Map 1F)				<i>itza</i>
-	Terminal apophysis otherwise (Figs. 107, 113)	21			
21(20)	Median apophysis with two spines (6h in Fig. 108); southeastern Canada to Nueva León (Map 1K)				<i>spiculata</i>
-	Median apophysis with one spine (6 h in Fig. 114); eastern United States to Nuevo León (Map 2B)				<i>placida</i>

***Mangora montana* Chickering
Figures 1-7; Map 1A**

Mangora montana Chickering, 1954: 204, figs. 15-17, ♀♂. Male holotype and female allotype from El Volcán, Panama, in MCZ, examined. Platnick, 2004.

Description. Female paratype from El Volcán. Carapace, legs, sternum grayish orange-white. Abdomen dorsum with

black, gray, and white pigment spots (Fig. 3); venter well marked (Fig. 4). Posterior eye row procurved. Ocular trapezoid longer than wide, widest posteriorly. Posterior median eyes 1.5 diameters of anterior medians; lateral eyes 0.8 diameter. Anterior median eyes 0.9 diameter apart, 0.9 from laterals. Posterior median eyes 0.7 diameter apart, 0.7 from laterals. Total length 3.4 mm. Carapace 1.5 mm long, 1.1 wide in thoracic region, 0.7 wide behind eyes, 0.7 high. First femur 1.4 mm, patella and tibia 1.7, metatarsus 1.4, tarsus 0.7. Second patella and tibia 1.7 mm, third 1.0, fourth 1.6.

Male from Osa Peninsula, Costa Rica. Lighter than female, with only faint coloration on dorsum of abdomen. Posterior eye row procurved. The median eye trapezoid is longer than wide, slightly wider posteriorly. Posterior median eyes 1.3 diameters of anterior medians; lateral eyes 0.6 diameter. Anterior median eyes 0.8 diameter apart, 0.8 from laterals. Posterior median eyes 0.4 diameter apart, 0.4 from laterals. Height of clypeus 1.5 diameters of anterior median eye. Total length 2.3 mm. Carapace 1.3 mm long, 1.0 wide in thoracic region, 0.4 wide behind lateral eyes, 0.7 high. First femur 1.3 mm, patella and tibia 1.4, metatarsus 1.2, tarsus 0.6. Second patella and tibia 1.2 mm, third 0.7, fourth 1.2.

Variation. Total length of females 2.6–3.6 mm, males 2.1–2.6 mm. The illustrations were made from female paratypes and males from El Volcán, Panama.

Diagnosis. *Mangora montana* is darker (Figs. 3, 4) than *M. craigae* (Fig. 10), and the epigynum has a sclerotized, almost posterior straight edge (Fig. 1), whereas that of *M. craigae* is less sclerotized (Fig. 8) and the posterior edge has slight dents (Figs. 8, 9).

The male is distinguished from that of *M. craigae* by a differently shaped terminal apophysis (compare 12 h in Figs. 5–7 and 12 h in Figs. 11–13).

Distribution. Costa Rica, western Panama (Map 1A).

Paratypes. PANAMA Chiriquí: Boquete, July 1939, 1♀ (A. M. Chickering, MCZ); El Volcán, 20 Feb. 1936, many ♀♂ (W. J. Gertsch, AMNH); Aug. 1950, 2♀ (A. M. Chickering, MCZ); Cerro Punta, 3 Feb. 1936, 1♀ (W. J. Gertsch, AMNH).

Specimens Examined. COSTA RICA Puntarenas: Butler's Finca, 9°15'N, 83°47'W, 28 Jan. 1976, 2♀ (Roth-Schropfer, AMNH); San Isidro del General, 660–1,300 m, 2♀ (D. Round, MCZ); Osa Peninsula, 4 km SW Rincón, 08°42'N, 83°29'W, Feb. 1967, 1♂ (Organization for Tropical Studies, MCZ).

Mangora craigae new species Figures 8–13; Map 1B

Holotype. Male holotype from Monteverde Cloud Forest, Bosque del Río, 1,580 m, Puntarenas Province, Costa Rica, 13 July 1977, female paratype, 4 Aug. 1977 (C. L. Craig) in MCZ. The species is named after the collector, arachnologist Cay Craig.

Description. Female paratype. Prosoma orange, with legs lighter. Abdomen orange-white with a pair of dorsal, longitudinal bands of white spots (Fig. 10), sides with similar bands, joining anteriorly; venter with bands between epigynum and spinnerets. Posterior eye row procurved. Ocular trapezoid longer than wide, widest posteriorly. Posterior median eyes 1.3 diameters of anterior medians; anterior lateral eyes 1.0 diameter, posterior laterals 0.7. Anterior median eyes their diameter apart, 1.0 diameter from laterals. Posterior median eyes their diameter apart, 1.0 diameter from laterals. Total length 3.5 mm. Carapace 1.6 mm long, 1.3 wide in thoracic region, 0.7 wide behind eyes, 0.8 high. First femur 1.7 mm, patella and tibia 1.8, metatarsus 1.7, tarsus 0.8. Second patella and tibia 1.7 mm, third 1.3, fourth 1.7.

Male holotype. Lighter than female. Eye arrangement similar to that of female. Posterior median eyes 1.0 diameter of anterior medians; lateral eyes 0.6 diameter. Anterior median eyes 1.0 diameter apart, 0.8 from laterals. Posterior median eyes 0.8 diameter apart, 0.8 from laterals. Total length 2.7 mm. Carapace 1.4 mm long, 1.2 wide in thoracic region, 0.5 wide behind eyes, 0.8 high. First femur 1.5 mm, patella and tibia 1.6, metatarsus 1.3, tarsus 0.7.

Second patella and tibia 1.5 mm, third 0.8, fourth 1.5.

Variation. Total length of females 2.8–3.8 mm, males 2.6–2.7 mm. The illustrations were made from female paratypes, and male from the holotype.

Diagnosis. *Mangora craigae* is lighter than *M. montana* and has the epigynum lightly sclerotized with an undulating posterior edge (Fig. 8), unlike that of *M. montana* (Fig. 1); in posterior view the median plate is smaller (Fig. 9) than that of *M. montana*.

In the palpus of the male, the terminal apophysis (12 h in Figs. 11–13) is different in shape from that of *M. montana* (Figs. 5–7).

Natural History. Specimens have been found in cloud forest at Monteverde, and roadside in forest in Braulio Carrillo National Park.

Distribution. Costa Rica (Map 1B).

Paratypes. COSTA RICA *Cartago* [?]: Orosi ["central flat land," Reimoser, 1940], 1 ♀ (Picado, MCZ). *San José*: Braulio Carrillo Natl. Park, 1,400–1,600 m, 26 July 1983, 2 ♀ (H., L. Levi, W. Eberhard, MCZ); Bajo Hondura, 1,250 m, Mar. 1986, 3 ♀; 26 July 1983, 3 ♀; Dec. 1989, 2 ♀ (W. Eberhard, MCZ); Río Honduras, 30 Mar. 1991, 1,200 m, 2 ♀ (W. Eberhard, MCZ); Zurqui, 1,600 m, May 1992, 1 ♂ (W. Eberhard, MCZ). *Alajuela*: Peñas Blancas, headwaters of Río Peñas Blancas, 13 July 1980, 1 ♀ (J. Coddington, MCZ). *Puntarenas*: Monteverde Biol. Reserve, 17 Mar. 1979, 1 ♀; 3 Apr. 1979, 1 ♂; 5 June 1980, 1 ♀ (J. Coddington, MCZ, USNM); Bosque del Río, 1 May 1977, 1 ♀; 11 May 1977, 1 ♀; 3 July 1977, 1 ♀; 23 July 1977, 1 ♀; 3 Aug. 1977, 1 ♀; 24 May 1978, 1 ♂ (C. L. Craig, MCZ); Bosque Nuboso, 22 July 1978, 1 ♀ (C. L. Craig, P. Klass, MCZ); Las Cruces nr. San Vito, 1,100 m, Jan. 1987, 2 ♀ (W. Eberhard, MCZ).

Mangora picta O. P.-Cambridge Figures 14–19; Map 1C

Mangora picta O. P.-Cambridge, 1889: 14, pl. 3, fig. 5, ♂. Male lectotype here designated from Chac-

tum [?], Guatemala in BMNH, examined. F. P.-Cambridge, 1904: 479, pl. 45, fig. 14, ♂. Platnick, 2004.

Mangora trilineata O. P.-Cambridge, 1889: 14, pl. 3, fig. 7, ♀. Female lectotypes, here designated from Chiacam [coffee plantation, Alta Verapaz, 26 km NE Cobán (Selander and Vaurie, 1962)], Guatemala, in BMNH, examined. F. O. P.-Cambridge, 1904: 480; pl. 45, fig. 20, ♀. Chickering, 1954: 213, figs. 27, 28, ♀. Platnick, 2004. NEW SYNONYMY.

Note. Chickering (1954) noted, correctly, that the female described with *Mangora picta* is actually the female of *M. melanocephala* (= *M. spinula*), but overlooked the correct match of the female of *M. trilineata* with the male of *M. picta*. Males and females are commonly collected together.

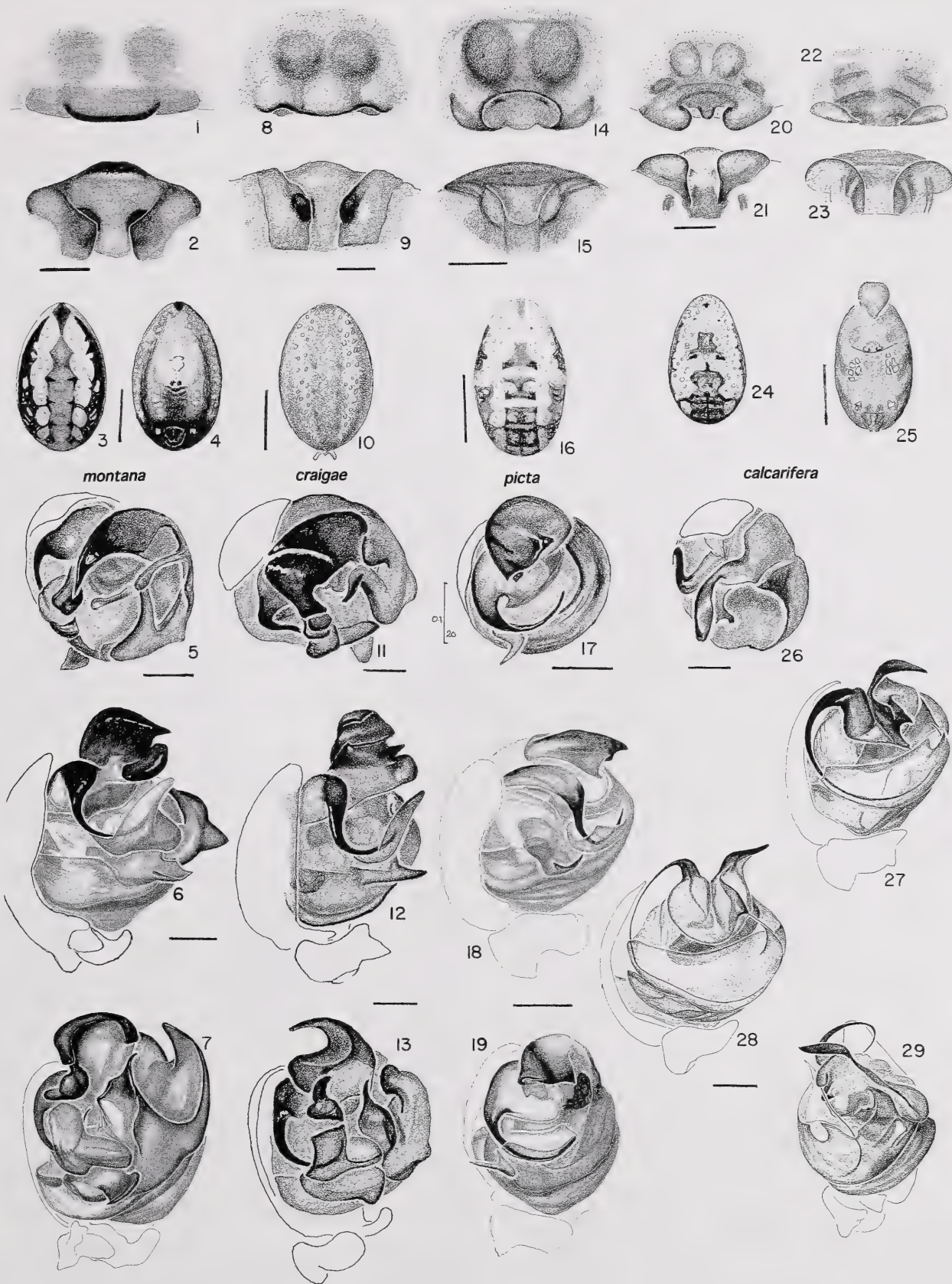
Description. Female from Xilitla, San Luis Potosí, Mexico. Carapace orange, with a dusky patch on each side of thoracic region. Legs light orange. Abdomen orange-white, with posterior median black ladder, and areas with white pigment spots (Fig. 16); venter orange-white. Posterior eye row procurved. Ocular trapezoid longer than wide, widest posteriorly. Posterior median eyes 1.5 diameters of anterior medians; lateral eyes 0.7 diameter. Anterior median eyes 0.6 diameter apart, 0.6 from laterals. Posterior median eyes 0.4 diameter apart, 0.5 from laterals. Total length 2.7 mm. Carapace 1.2 mm long, 1.0 wide in thoracic region, 0.5 wide behind eyes, 0.7 high. First femur 1.5 mm, patella and tibia 1.7, metatarsus 1.4, tarsus 0.6. Second patella and tibia 1.5 mm, third 0.9, fourth 1.7.

Male lighter than female. Posterior median eyes 1.5 diameters of anterior medians; lateral eyes 0.7 diameter. Anterior median eyes 1.0 diameter apart, 0.8 from laterals. Posterior median eyes 1.3 diameters apart, 0.8 from laterals. Total length 1.8

Figures 1–7. *Mangora montana* Chickering. 1–4, female. 1, 2, epigynum. 1, ventral. 2, posterior. 3, abdomen, dorsal. 4, abdomen, ventral. 5–7, male, left palpus. 5, apical. 6, mesal. 7, ventral.

Figures 8–13. *Mangora craigae* new species. 8–10, female. 8, 9, epigynum. 8, ventral. 9, posterior. 10, abdomen, dorsal. 11–13, male, palpus. 11, apical. 12, mesal. 13, ventral.

Figures 14–19. *Mangora picta* O. P.-Cambridge. 14–16, female. 14, 15, epigynum. 14, ventral. 15, posterior. 16, abdomen, dorsal. 17–19, male, palpus. 17, apical. 18, mesal. 19, ventral.



Figures 20–29. *Mangora calcarifera* F. O. P.-Cambridge. 20–25, female. 20–23, epigynum. 20, 22, ventral. 21, 23, posterior. 24, abdomen, dorsal. 25, abdomen, ventral. 26–29, male, palpus. 26, apical. 27, mesal. 28, ventral. 29, lateral.

Scale lines: 1.0 mm, genitalia 0.1 mm.

mm. Carapace 1.1 mm long, 0.9 wide in thoracic region, 0.4 wide behind eyes, 0.6 high. First femur 1.2 mm, patella and tibia 1.5, metatarsus 1.2, tarsus 0.7. Second patella and tibia 1.4 mm, third 0.8, fourth 1.3.

Variation. Total length of females 2.5–3.4 mm, males 1.8–2.4 mm. The illustrations were made from the female lectotypes of *M. trilineata*, and from the male lectotype of *M. picta*.

Diagnosis. The epigynum of *M. picta* is lightly sclerotized; the depression is variable in shape, and the rim barely distinct. It is distinguished from all other species by the large, distinct pair of seminal receptacles, less than their length from the posterior edge (Fig. 14).

Males have a distinct terminal apophysis (12 h in Figs. 17–19) differing from that of *M. montana* (Figs. 5–7) and *M. craigae* (Figs. 11–13).

Natural History. Specimens have been collected from a bromeliad at Fortín, Veracruz, and from tropical, deciduous forest in Jalisco, Mexico.

Distribution. Nuevo León, Mexico to western Honduras (Map 1C).

Specimens Examined. MEXICO *Nuevo León:* Tiera, 20 km NW Laredo, 27 July 1945, 1 ♀ (H. Wagner, AMNH). *San Luis Potosí:* Fortín, 25 July 1956, 1 ♀, 2 ♂ (V. Roth, AMNH); 26 June 1944, 2 ♀ (L. I. Davis, AMNH); 3.2 km N Fortín, 5 ♀, 3 ♂ (J., W. Ivie, AMNH); Huachinango, 7 Oct. 1947, 1 ♀ (H. M. Wagner, AMNH); Huichichuyan, 19 May 1952, many ♀ ♂ (W. J. Gertsch, AMNH); Picolo, 21 May 1952, 1 ♀ (W. J. Gertsch et al., AMNH); Tamazunchale, 6, 7 July 1941, 1 ♀ (A. M., L. I. Davis, AMNH); 23 Nov. 1946, 1 ♀ (CAS); 20 May 1952, 1 ♀, 1 ♂ (W. J. Gertsch, AMNH); 19 Apr. 1963, 1 ♀ (W. J. Gertsch, W. Ivie, AMNH); Valles, 1961, 1 ♀ (L. Steude, AMNH); 13 km NNW Xilitla, 23 July 1954, 1 ♀, 2 ♂ (R. Dreisbach, MCZ); Xilitra, 16 km NE Xilitla, 19 Apr. 1963, 1 ♀ (W. J. Gertsch, W. Ivie, AMNH); Cueva de Salitre, ca. 21°23'N, 98°23'W, 13 June 1983, 1 ♀ (W. Maddison, MCZ). *Nayarit:* Compostela, 16 Sep. 1957, 1 ♀ (R. Dreisbach, MCZ); Tepic, 22–24 Sep. 1947, 2 ♀ (B. Malkin, AMNH); 30 km SW Río Cañas, 4 Nov. 1987, 1 ♀ (V. F. Lee, CAS). *Jalisco:* Municipio El Limón, 3 Sep. 1997, 1 ♀ (F. Alvarez, MCZ); 26 km S Autlan, 8 July 1984, 1 ♀ (J. Woolley, AD); Esta. Biol. Chamela, 100 m, Sep. 1987, 1 ♀ (W. Eberhard, MCZ). *Colima:* 14 km N Comala, 12 July 1984, 2 ♂ (J. Woolley, AD). *Veracruz:* Córdoba, 1909, 4 ♀, 1 ♂

(A. Petrunkevitch, AMNH); 13–15 May 1946, 4 ♀ (J. C., D. L. Pallister, AMNH); 3.2 km E Córdoba, 6 Aug. 1966, 1 ♀ (J., W. Ivie, AMNH); Fortín, 20 May 1947, 1 ♀ (Bordas, AMNH); 5 Aug. 1966, many ♀ ♂ (J., W. Ivie, AMNH); 4.2 km NE Huatusco, 22 July 1985, many ♀ ♂ (J. Woolley et al., AD); Jalapa, 22 May 1946, many ♀ ♂ (J. C., D. L. Pallister, AMNH); Roma nr. Jalapa, Aug. 1948, 1 ♂ (C., M. Goodnight, AMNH); July 1981, 3 ♀, 1 ♂ (C. Gold, CAS); La Planta de Moctezuma, nr. Fortín; 7 July 1947, 1 ♀ (C., M. Goodnight, AMNH); 17 Dec. 1948, 1 ♀ (H. B. Leech, CAS); Mirador, Zacuapam, 20 Aug. 1933, 1 ♀ (W. James, AMNH); Orizaba, 12 Feb. 1954, 1 ♀ (R. R. Dreisbach, MCZ); Penuela, 18°53'N, 96°48'W, 26 Apr. 1963, 1 ♀ (W. J. Gertsch, W. Ivie, AMNH); Potrero, 24 June 1936, 1 ♀ (L. I. Davis, AMNH); Tlapacoyan, 300 m, 7–8 July 1946, 1 ♀ (H. Wagner, AMNH); 24 June 1947, 2 ♀, 1 ♂ (L. I. Davis, AMNH). *Hidalgo:* Chapulhuacan, 20 May 1952, 1 ♀ (W. J. Gertsch et al., AMNH); 27 July 1966, 1 ♀ (J., W. Ivie, AMNH). *Puebla:* Huauchinango, 7 Oct. 1947, many ♀ ♂ (H. Wagner, AMNH); Villa Juárez, 10 Oct. 1947, many ♀ ♂ (H. Wagner, AMNH); 1.5 km. W of Hwy. 130, bypass of Xicotepec de Juárez, ca. 20°17'N, 97°59'W, 17 June 1983, 1 ♂ (W. Maddison, MCZ); 7.5 km. SW La Cumbre, 1,730 m, 23 July 1987, 3 ♀, 4 ♂ (Kopvarik, Schaffner, AD); 6.2 km NE San Gabriel Mixtepec, 16 July 1985, 1 ♀ (J. Woolley, AD). *Guerro:* 3.2 km E Ocotito, 11 July 1985, 1 ♂ (J. Woolley et al., AD). *Oaxaca:* 7.5 km S San Gabriel Mixtepec, 16 July 1985, 2 ♂ (J. Woolley et al., AD); 30.4 km S San Miguel Suchixtepec, 17 July 1985, 1 ♀ (J. Woolley, AD); Soledad, 7 May 1947, 1 ♀ (H. Wagner, AMNH); Porto Escondido, 15 July 1985, 2 ♂ (J. Woolley et al., AD); 12.8 km NE El Punto, 18 July 1985, 1 ♂ (J. Woolley et al., AD). *Chiapas:* Finca Cuauhtemoc nr. Cacahuatan, 3–13 Aug. 1950, 2 ♀, 2 ♂ (C., M. Goodnight, AMNH); Finca Cusuhtemoc, 6 Aug. 1950, 1 ♀ (C. Goodnight, AMNH); Finca Lubeca, 20 km N Huixtla, 11 Jan. 1945, 2 ♀, 1 ♂ (T. C. Schneirla, AMNH); Lagunas de Montebello, 48 km Comitán, 23 Aug. 1977, 4 ♀, 1 ♂ (T. C. Meikle, C. E. Griswold, CAS); Ocosingo, 24, 25 June 1950, 1 ♀, 1 ♂ (C., M. Goodnight et al., AMNH); rim of canyon 5 km S Sumidero, 16°48'N, 93°05'W, 17 Aug. 1966, 1 ♀ (J., W. Ivie, AMNH). GUATEMALA *Yepocapa,* Chimaltenango, 30 Aug. 1948, 1 ♀ (H. T. Dalmat, USNM); 1,400 m, 27 July 1949, 2 ♂ (T. H. Farr, AMNH); Mocá, June 1947, many ♀ ♂; 31 Aug. 1947, 1 ♀ (C., P. Vaurie, AMNH); Tumahu, 1,000 m, 10–11 July 1947, 2 ♀ (C., P. Vaurie, AMNH). *Quixchaya:* Suchitepequez, 9 Oct. 1944, 1 ♂ (H. Elishewitz, AMNH). HONDURAS *Copán:* Copán, 16 Feb. 1937, sweeping weeds, 1 ♀ (Roys, MCZ).

Mangora calcarifera F. O. P.-Cambridge
Figures 20–29; Map 1D

Mangora calcarifera F. O. P.-Cambridge, 1904: 479, pl. 45, figs. 12, 13, ♀ ♂. Two female, two male syntypes from Petexbatún, Guatemala, in BMNH, ex-

amed. Levi, 1975: 132, figs. 131–144. Platnick, 2004.

Description. Description is found in Levi (1975).

Variation. Total length of females 3.2–4.4 mm, males 2.2–2.7 mm.

Diagnosis. The epigynum of *M. calcarifera* is lightly sclerotized and variable; it is distinguished from that of other species by the one or two pairs of diagonal marks made by ducts that show through the transparent cuticle, anterolateral to the median depression (Figs. 20, 22). Unlike other species with a lightly sclerotized epigynum, in *M. calcarifera* the venter of the abdomen has two pairs of areas containing silver spots (Fig. 25).

The male has a longer filamentous embolus in the palpus (Figs. 27, 28) than have other Mexican and Central American *Mangora*, and has a distinct distal flap like a rabbit's ear on the tip of the palpus (Figs. 26–29), similar to the palpus of *M. melanocephala* (Fig. 45). However, the male lacks the macroseta on the fourth femur present in the male of *M. melanocephala* (Fig. 47).

Natural History. A specimen was found in deep weeds at Salto Falls, San Luis Potosí.

Distribution. Texas to Costa Rica, mostly in eastern regions, the Gulf drainage (Map 1D).

Specimens Examined. TEXAS Cameron Co.: 16 km SE Brownsville, 8 Oct. 1937, 1 ♀ (Davis, Fones, MCZ). MEXICO Tamaulipas: 1 km N Gomez Farias, 26 Dec. 1971, 2 ♀ (C. J. Durden, USNM); 51 km S Ciudad Victoria, 29 Jan. 1947, 1 ♀ (AMNH). San Luis Potosí: 10 km N Naranjo Salto, 5 May 1973, 1 ♂ (B. Vogel, USNM); nr. Ciudad del Maiz, 760 km, 28 July 1953, 1 ♀ (C. J. Goodnight, AMNH); Huichichuyan, 19 May 1952, 2 ♀ (W. J. Gertsch, AMNH); Salto Falls, 5 Feb. 1967, 1 ♀ (W. Peck, CAS); Tamanzuchale, 15 Apr. 1946, 2 ♀ (L. Davis, M. Johnston, AMNH); 20 May 1952, 1 ♂ (W. J. Gertsch et al., AMNH); 20 July 1956, 1 ♂ (W. J. Gertsch, V. Roth, AMNH); 1.6 km SW Tamazunchale, 25 July 1966, 1 ♀ (J., W. Ivie, AMNH); Xilitla, 23 July 1954, 1 ♂ (R. Dreisbach, MCZ); 16 km NE Xilitla, 19 Apr. 1963, 1 ♂ (W. J. Gertsch, W. Ivie, AMNH); Valles, 1961, 2 ♀, 1 ♂ (L. Steude, AMNH). Veracruz: Catemaco, Playa Azul, 9 Aug. 1966, 1 ♀, 1 ♂ (J., W. Ivie, AMNH); 7.5 km W of Catemaco, 23 June 1982, 1 ♀ (F. Coyle, MCZ); 4

km E Huatusco, 23 July 1984, 1 ♀ (J. B. Woolley, AD); nr. La Palma, N of Catemaco, 18°36'N, 95°07'W, 29 June–1 July 1983, 2 ♀; 1, 2 Aug. 1983, 2 ♀ (W. Maddison, MCZ); Jesus Carranza, 13 July 1947, 1 ♀ (C. Goodnight, AMNH); Los Tuxtlas Biol. Sta., July 1990, 1 ♀ (B. Traw, MCZ); Martínez de la Torre, 4 July 1946, 1 ♂ (H. Wagner, AMNH); Papan-tla, 12 Oct. 1947, 2 ♂ (H. Wagner, AMNH); Poza Rica, 13 Apr. 1946, 1 ♀ (C. Bolivar, AMNH); Tecolutla, 13 Oct. 1947, 1 ♀ (H. Wagner, AMNH); Tlapacoyan, 300 m, 1, 8 July 1946, 1 ♂ (H. Wagner, AMNH). Hidalgo: SW Progreso, March 1936, 1 ♀, 1 ♂ (L. I. Davis, AMNH). Puebla: Huachinango, 7 Oct. 1947, 1 ♀, 2 ♂ (H. M. Wagner, MCZ). Oaxaca: Tolosa, 1–12 Apr. 1947, 1 ♀ (B. Malkin, AMNH). Campeche: 6 km W Francisco Escarcegan, 18°37'N, 90°48'W, 11, 12 July 1983, 1 ♀ (W. Maddison, MCZ). Quintana Roo: 31 km NE of Felipe Carrillo, 19°48'N, 87°52'W, 17 July 1983, 2 ♀ (W. Maddison, MCZ). Chiapas: Palenque Ruins, 9 July 1949, 1 ♂ (C. Goodnight, AMNH); Ocosingo, 900 m, 24, 25 June 1950, 1 ♀, 2 ♂ (C., M. Goodnight et al., AMNH). GUATEMALA Petén: Tikal, 7 July 1975, 1 ♂ (W. Sedgwick, MCZ); Uaxactún, Mar., Apr. 1931, 1 ♀ (H. H. Bartlett, MCZ). HONDURAS nr. Lancetilla, 19 July 1929, 1 ♂ (A. M. Chickering, MCZ). COSTA RICA San José: Cerro Zurqui, 1,600 m, May 1992, 1 ♀ (W. Eberhard, MCZ).

Mangora melanocephala (Taczanowski) Figures 30–47; Map 1E

Linyphia melanocephala Taczanowski, 1874: 70. Male and female syntypes from Cayenne, French Guiana, in PAN, examined.

Zilla melanocephala:—Keyserling, 1881: 552, pl. 16, fig. 4, ♀ ♂; 1893: 302, pl. 15, fig. 223, ♀ ♂.

Mangora picta:—O. P.-Cambridge, 1889: 14, pl. 3, fig. 6, ♀; F. O. P.-Cambridge, 1904: 479, pl. 45, ♀ (female only, not male holotype). Error first reported by Chickering, 1954.

Mangora spinula F. O. P.-Cambridge, 1904: 480, pl. 45, fig. 18, ♂. Male holotype from Teapa, [Tabasco], Mexico, in BMNH, examined. Chickering, 1954: 211, figs. 23–26, ♀. Platnick, 2004. NEW SYNONYMY.

Mangora dentembolus Chamberlin and Ivie, 1936: 59, pl. 12, figs. 114–116, ♂. Male holotype from Barro Colorado Island, Panama, vial present in AMNH, but specimen lost. Synonymized with *spinula* by Chickering, 1954. NEW SYNONYMY.

Zygiella melanocephala:—Roewer, 1942: 887.

Mangora aragarcensis Soares and Camargo, 1948: 372, figs. 27, 28, ♀. Female holotype from Aragarcas, Goiás, Brazil, in MZSP no. 1215, examined. Platnick, 2004. NEW SYNONYMY.

Mangora melanocephala:—Caporiacco, 1948: 659. Platnick, 2004. Caporiacco first recognized that *Linyphia melanocephala* is a *Mangora*.

Mangora pozonae Schenkel, 1953: 20, fig. 18, ♀. Female holotype from Conwarook (Potaro), Pozón,

Depto. Acosta, Falcón, Venezuela, in NMB, examined. Platnick, 2004. NEW SYNONYMY.

Note. Keyserling (1881) had apparently examined the original specimens of *Taczanowski* and made good illustrations of the genitalia, which had been ignored.

Description. Female from Panama. Prothorax orange, with a dusky patch on each side of thoracic region of carapace (Fig. 38), legs lighter. Abdomen orange-white, with posterior median black ladder, and areas with white pigment spots (Fig. 38); venter orange-white. Posterior eye row procurved. Ocular trapezoid longer than wide, widest posteriorly. Posterior median eyes 1.5 diameters of anterior medians; lateral eyes 0.7 diameter. Anterior median eyes 0.6 diameter apart, 0.6 from laterals. Posterior median eyes 0.4 diameter apart, 0.5 from laterals. Total length 2.7 mm. Carapace 1.2 mm long, 1.0 wide in thoracic region, 0.6 wide behind eyes, 0.7 high. First femur 1.5 mm, patella and tibia 1.7, metatarsus 1.4, tarsus 0.6. Second patella and tibia 1.5 mm, third 0.9, fourth 1.7.

Male from Panama lighter than female. Posterior median eyes 1.3 diameters of anterior medians; lateral eyes 0.8 diameter. Anterior median eyes 1.0 their diameter apart, 0.8 from laterals. Posterior median eyes 1.3 diameters apart, 0.8 from laterals. Total length 1.8 mm. Carapace 1.1 mm long, 0.9 wide in thoracic region, 0.4 wide behind eyes, 0.6 high. First femur 1.2 mm, patella and tibia 1.5, metatarsus 1.2, tarsus 0.7. Second patella and tibia 1.4 mm, third 0.8, fourth 1.3.

Variation. Total length of females from Central America 2.3–3.5 mm, males 1.7–2.1 mm. The epigynum is lightly sclerotized and the posterior rim quite variable (Figs. 30, 34, 39); the posterior swelling varies in angles and in thickness; in posterior view the median borders of the lateral plates are usually, but not always, parallel and close to each other (Figs. 31, 35).

Diagnosis. The epigynum of *M. melanocephala* is lightly sclerotized and distin-

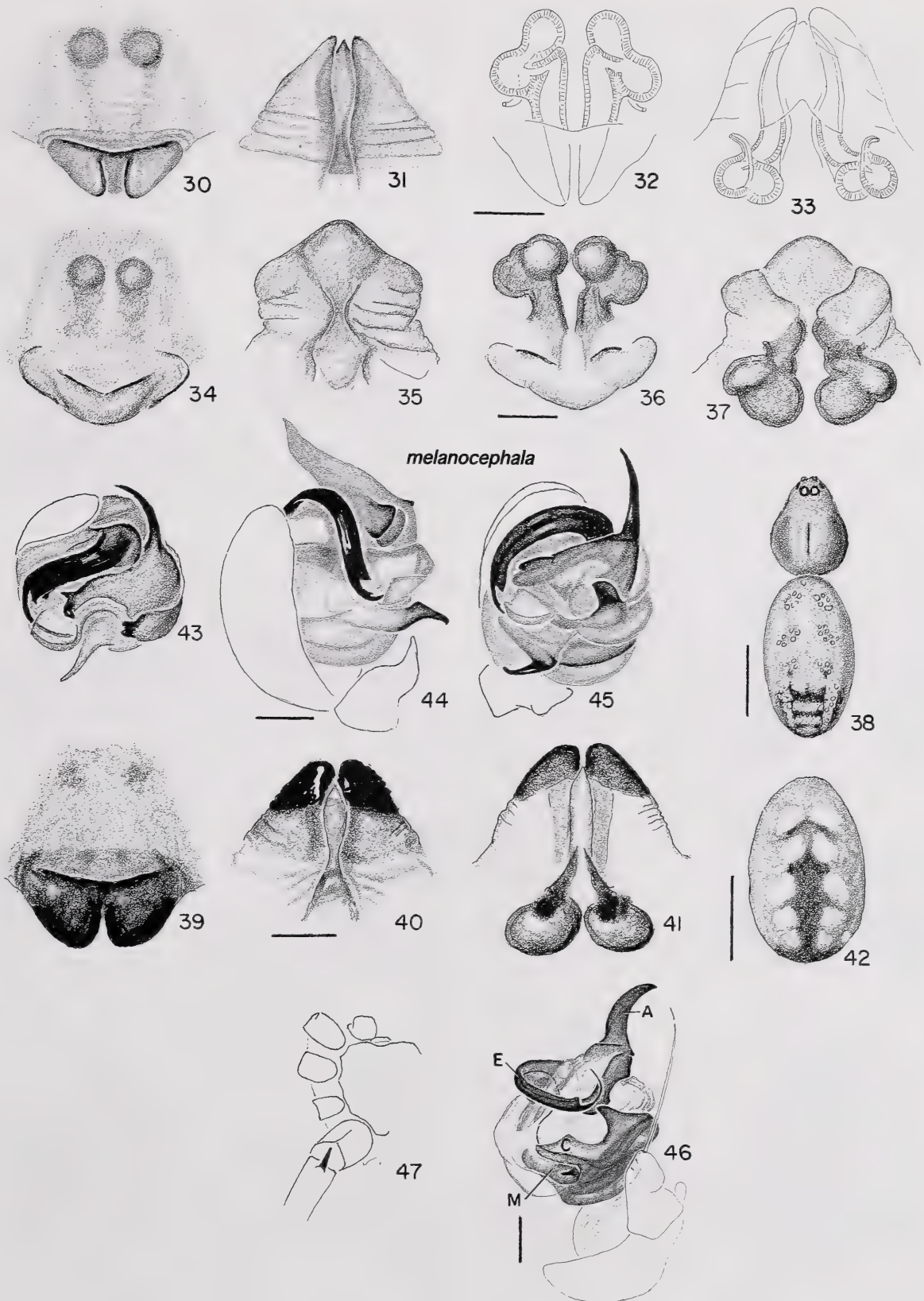
guished from that of other *Mangora* in the region by having the spherical spermathecae of the epigynum placed far anterior from the chevron-shaped posterior swelling (Figs. 30, 34); the swelling is variable in thickness and shape, rarely sclerotized (Fig. 30). The median plate, in posterior view, is narrow and bordered by parallel edges of the lateral plates (Fig. 31).

Males are the only tiny (1.7–2.1 mm) *Mangora* in Central America with a macroseta on the ventral face of the fourth femur (Fig. 47); the others with macroseta on the fourth femur are the larger-sized *M. pia* and *M. falconae*. Another distinctive character is the projection on the terminal apophysis of the palpus, and the ragged-tipped embolus (Figs. 43–46).

Natural History. The species has been collected in various habitats: river bottom; in lowland forest south of Volcán, Costa Rica; in understory of secondary forest, in open vegetation and cultivated areas at La Selva, Costa Rica; in low vegetation, forest edge and low vegetation, dense jungle near Turrialba, Costa Rica; in vegetation along ditch at Finca la Laja Forest in Costa Rica. Also, it has been found as prey of *Trypoxylon saussurei* wasps in Costa Rica (no locality, R. Coville collection) and canopy fogging of monsoon forest in Panama City and humid forest in Colón.

Distribution. From the Isthmus of Tehuantepec to Peru and Brazil (Map 1E). (Additional South American records will be published in a separate paper.)

Specimens Examined. MEXICO Veracruz: 61 km S Acayucan, 17°57'N, 94°54'W, 2 March 1976, ♀ (V. Roth, AMNH); Catemaco, 9 Aug. 1966, ♀♂ (J., W. Ivie, AMNH); La Buena Ventura, July 1909, ♀♂ (A. Petrunkevitch, AMNH); 16 km S San José del Carmen, 16 Apr. 1953, ♂ (L. I. Davis, AMNH). Chiapas: Cacahuatan, 9 Aug. 1950, ♀ (C., M. Goodnight, AMNH); El Real, 6, 7 July 1950, ♀ (C., M. Goodnight, AMNH); Escuintla, ♀♂ (N. Banks, MCZ); Finca Santa Marta, nr. Huehuetan, 31 July–1 Aug. 1950, ♀ (C., M. Goodnight, AMNH); Ocosingo, 900 m, 25 June 1950, ♂ (C., M. Goodnight et al., AMNH); Las Ruinas Palenque, July 1948, ♀♂ (C., M. Goodnight, AMNH); 22 July 1949, ♂ (C. Goodnight, AMNH); Pichuacalco, 17 July 1947, ♀ (C. J. Goodnight, AMNH); La Zacualpa, Aug. 1909, ♀♂ (A.



Figures 30–47. *Mangora melanocephala* (Taczanowski). 30–42, female. 30–37, 39–41, epigynum. 30, 34, 39, ventral. 31, 35, 40, posterior. 32, 36, ventral cleared. 33, 37, 41, posterior, cleared. 30–34, syntype. 35–37, Costa Rica, unusual specimen. 38, carapace and abdomen. 39–42, Nicaragua, doubtful determination. 42, abdomen, dorsal. 43–46, male, left palpus. 43, apical. 44, mesal. 45, ventral. 46, left palpus, expanded. 47, macroseta on fourth femur.

Scale lines: 1.0 mm, genitalia 0.1 mm.

Abbreviations: A, terminal apophysis; C, conductor; E, embolus; M, median apophysis.

Petrunkevitch, AMNH); Selva del Ocoto, 32 km NW Ocozacoautla, 27 Aug. 1973, ♂ (C. Mullinex et al., CAS). BELIZE Mt. Pine Ridge, Feb.–Mar. 1931, ♀ (H. H. Bartlett, MCZ); nr. Río Frío Cave, 5 June 1974, ♂ (C. J. Goodnight, AMNH). GUATEMALA *Los Petén*: Tikal Ruins, 1 July 1980, ♀ (J. Coddington, MCZ); Tikal, July 1975, ♀ (W. Sedgwick, MCZ); 7–12 Aug. 1979, ♀ (C. E. Griswold, T. C. Meikle, CAS). *Izabal*: Los Amates, 1908, ♀ ♂ (Kellerman, MCZ). *Alta Verapaz*: Lanquin nr. Gruta, 5 Feb. 1980, ♀ (V. B. Roth, AMNH). *Suchitepéquez*: Mocá, June 1947, ♂ (C., P. Vaurie, AMNH); *Variedades*, 1–4 July 1947, ♀ (C., P. Vaurie, AMNH). HONDURAS *Copán*: Copán, March 1939, ♂ (AMNH). *Atlantida*: Lancetilla, 1929, ♀ (A. M. Chickering, MCZ). NICARAGUA 50 km E Matagalpa, El Coyolar, 800 m, 20 Nov. 1991, ♀ ♂ (J. Maes, JM); Musawas, Waspuc River, Sep., Oct. 1955, ♀ ♂ (B. Malkin, AMNH). *Granada*: Volcán Mombacho, 700–800 m, 15 July 1998, ♀ (J. M. Maes, JM). COSTA RICA *Limón*: 20 km N Siquirres, 100 m, July 1980, ♀ (W. Eberhard, MCZ); Hamburg Farm, ♀ (C. R. Dodge, MCZ); Finca La Laja, 190 m, ♀ ♂ (K. A. Arnold, MCZ). *Heredia*: Puerto Viejo, La Selva, many records (CAS, MCZ, USNM). *Guanacaste*: Orosi, ♀ ♂ (Picado, MCZ). *Cartago*: Turrialba, many records (AMNH, CUC); Finca Sinfonia, 9°50'N, 83°05'W, 26 Jan. 1976, ♀ (Roth, Schroeffer, AMNH). *San José*: Bajo La Hondura (Braulio Carrillo Natl. Park), 1,400–1,600 m, 26 July 1983 (W. Eberhard, MCZ); Río Hondura, 10°N, 84°W, 1,200 m, 30 Mar. 1991, ♂ (W. Eberhard, MCZ); nr. Villa Colón, 800 m, Nov. 1990, (W. Eberhard, MCZ); San José, ♂ (E. Schmidt). *Puntarenas*: nr. Quepas Manuel-Antonio, 9°23'N, 84°09'W, 15–21 Feb. 1976, ♀ (Roth-Schoepfer, AMNH); 24 km S Volcán, 12 July 1970, ♀ (S. Riechert, AMNH); Osa Peninsula, 3.2 km SW Rincon, 21–28 Feb. 1967, ♀ (J. Nelson, MCZ); Corcovado Natl. Park, Sirena, 25 Feb. 1979, ♀ (J. Coddington, MCZ); Santa Elena nr. Monteverde, 20 June 1998, ♂ (K. J. Ribardo, CAS); Quizarra, 6 km E San Isidro, May 1989, ♀ (W. Eberhard, MCZ); San Isidro del General, 600–1,200 m, ♀ (D. Rounds, MCZ); nr. Tocales, Reserva Carara, Aug. 1983, ♀ (W. Eberhard, MCZ); Golfito, 25 Jan. 1995, ♀ (W. Eberhard, MCZ). PANAMA *Chiriquí*: Bugaba, July 1939, Aug. 1940, ♀ (A. M. Chickering, MCZ); 1, 2 Nov. 1985, ♀ (D. Quintero, MIUP); Cerca Cementerio, Bugaba, Río Mulo, 2 Nov. 1985, ♀ ♂ (D. Quintero, MIUP); La Fortuna, 1,100–1,200 m, 5 Apr. 1984, ♀ ♂ (W. Eberhard, MCZ); El Volcán, 20 Mar. 1936, ♀ ♂ (W. J. Gertsch, AMNH). *Veraguas*: Alto Limón (La Yeguado), 11 Aug. 1984, ♀ (D. Quintero, MIUP); San Martín, Santiago, 21 July 1983, ♀ (M. E. Mendoz,

MIUP). *Colón*: Colón, July 1979, ♀ (Broadhead et al., USNM). *Panamá*: El Valle, several records, ♀ ♂ (AMNH, MCZ); Arraiján, ♀ ♂ (A. M. Chickering, MCZ); Canal area, very common (MCZ, USNM); Cermeño, Jan.–Feb. 1940, ♂ (Zetek, MCZ); Panama City, July 1979, ♀ ♂ (E. Broadhead et al., USNM). *Darién*: Villa Darién, 12–18 Feb. 1984, ♂ (M. N. García, MIUP).

TRINIDAD nr. Port of Spain, 1913, ♀ ♂ (R. Thaxter, MCZ); 9 Feb. 1926, ♀ ♂ (W. S. Brooks, MCZ); Sangre Grande, 1913, ♀ ♂ (R. Thaxter, MCZ); Cumuto, Feb. 1926, ♀ (W. S. Brooks, MCZ). *St. Andrew Co.*: Valencia Ward at Oropuche River, 17 Aug. 1986, ♂ (G. B. Edwards, FSCA).

Mangora itza new species

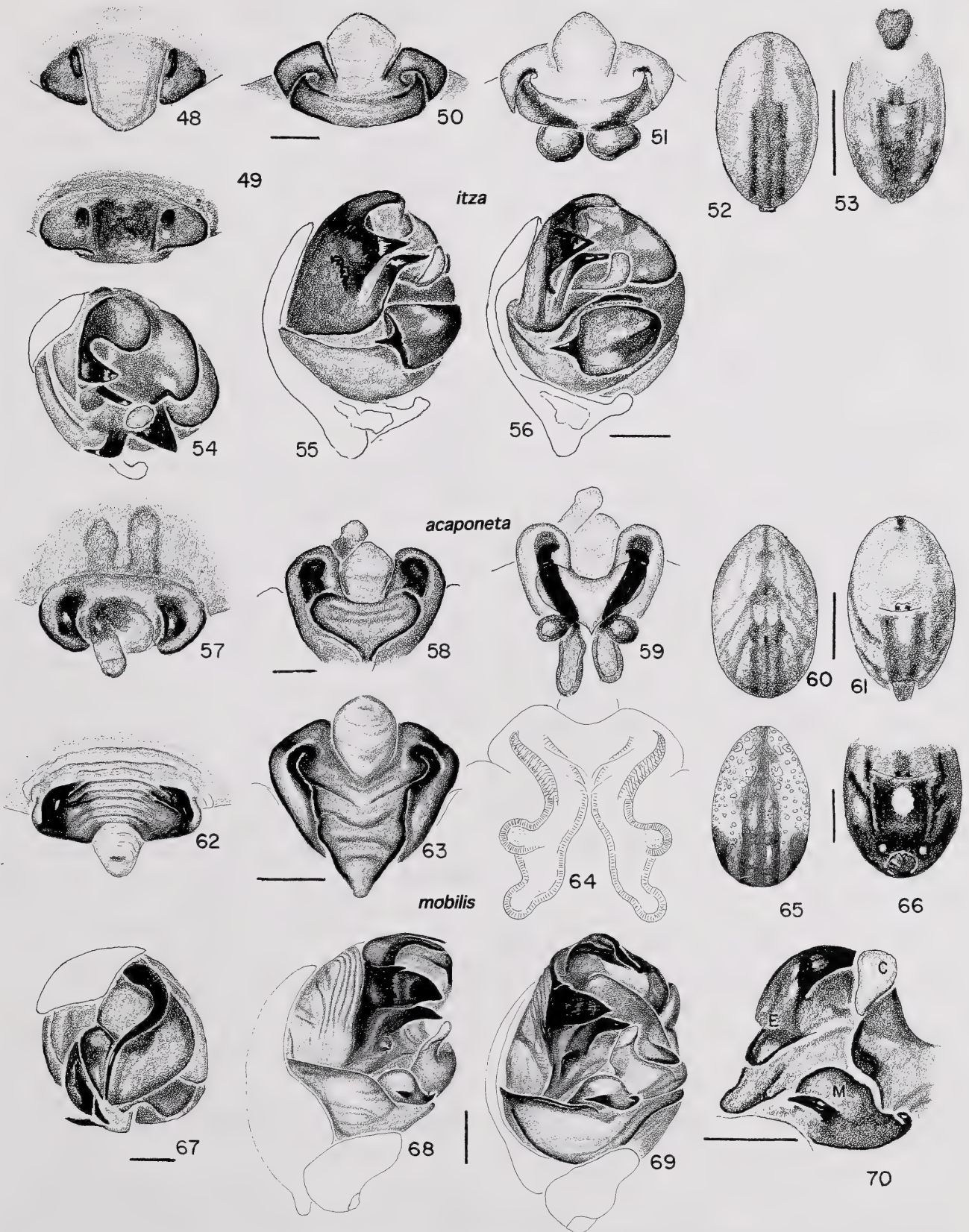
Figures 48–56; Map 1F

Holotype. Female holotype from Chichen Itza, Yucatan, Mexico, 12 Sep. 1964 (J. C. Pallister), in AMNH. The name is a noun in apposition after the type locality.

Description. Female holotype. Carapace yellowish, with a narrow, median longitudinal gray line. Labium, endites, sternum, legs yellowish; sternum grayish along borders. Abdomen with median, longitudinal dark band that is narrower anteriorly, containing posteriorly three darker bands, sides with scattered white spots (Fig. 52); venter light yellowish, with three white patches and two indistinct darker, longitudinal bands. A pair of white patches on sides (Fig. 53). Posterior eye row procurved. Ocular trapezoid longer than wide, rectangular. Posterior median eyes 1.2 diameters of anterior medians; anterior lateral eyes 1.0 diameter, posterior 0.8. Anterior median eyes their diameter apart, 1.2 from laterals. Posterior median eyes 0.7 diameter apart, 1.2 from laterals. Height of clypeus equals 0.8 diameter of anterior median eyes. Total length 3.5 mm. Carapace 1.7 mm long, 1.3 wide in thoracic region, 0.7 wide behind lateral eyes, 0.7 high. First femur 1.7 mm, patella and tibia 2.1, metatarsus 1.7, tarsus 0.8. Sec-

Figures 48–56. *Mangora itza* new species. 48–53, female. 48–51, epigynum. 48, ventral. 49, ventral, scape torn. 50, posterior. 51, posterior, cleared. 52, abdomen, dorsal. 53, abdomen, ventral. 54–56, male, left palpus. 54, apical. 55, mesal. 56, ventral.

Figures 57–61. *Mangora acaponeta* new species, female. 57–59, epigynum. 57, ventral. 58, posterior. 59, posterior, cleared. 60, abdomen, dorsal. 61, abdomen, ventral.



Figures 62–70. *Mangora mobilis* (O. P.-Cambridge). 62–66, female. 62–64, epigynum. 62, ventral. 63, posterior. 64, posterior, cleared. 65, abdomen, dorsal. 66, abdomen, ventral. 67–70, male, palpus. 67, apical. 68, mesal. 69, ventral. 70, median apophysis, conductor and embolus.

Scale lines: 1.0 mm, genitalia 0.1 mm.

ond patella and tibia 1.8 mm, third 1.2. Fourth femur 2.0 mm, patella and tibia 1.8, metatarsus 1.8, tarsus 0.7.

Male paratype. Coloration similar to that of female. Posterior eye row straight. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 0.8 diameter of anterior medians; lateral eyes 0.5 diameter. Anterior median eyes 0.7 diameter apart, 0.7 from laterals. Posterior median eyes 0.3 diameter apart, 1.0 from laterals. Height of clypeus equals 1.0 diameter of anterior median eyes. Total length 2.1 mm. Carapace 1.2 mm long, 0.8 wide in thoracic region, 0.3 wide behind lateral eyes, 0.4 high. First femur 1.4 mm, patella and tibia 1.5, metatarsus 1.3, tarsus 0.6. Second patella and tibia 1.3 mm, third 0.8, fourth patella and tibia 1.8.

Variation. Total length of females 3.5–3.7 mm, males 2.1–2.2 mm. The specimen from Uxmal is darker with a black sternum and black spots on legs. The epigynum is variable: the scape varies in width; in ventral view the lateral sclerites vary in amount of sclerotization; and in posterior view the transverse sclerite varies in sclerotization. One specimen had the scape torn off the epigynum (Fig. 49). The palpus of the male has a large concave median apophysis (4 h in Figs. 55, 56). The illustrations are a composite from various specimens.

Diagnosis. The epigynum of *M. itza* has a wide scape flanked by sclerotized lobes (Fig. 48), and is distinguished from other species by the wide transverse posterior band (Fig. 50).

The male is separated from others by the large concave median apophysis in the palpus with a spine pointing toward the cymbium (4 h in Figs. 55, 56).

Distribution. Yucatan Peninsula.

Paratypes. MEXICO *Campeche:* Campeche, 27, 28 Oct. 1946, 1♀, 1♂ (H. Wagner, AMNH). *Yucatan:* Chichen Itza, 16 July 1952, 1♀ (J. C. Pallister, AMNH); Uxmal, July 1981, 1♀ (C. Gold, CAS); Valladolid, 13 Sep. 1952, 1♂ (J. D. Pallister, AMNH).

Mangora acaponeta new species

Figures 57–61; Map 1F

Holotype. Female holotype from 12.8 km NW Acaponeta, Nayarit, Mexico, 25 Nov. 1948 (H. B. Leech) in CAS.

Description. Female holotype. Carapace light orange, with a median gray line and gray patch on each side of thoracic region. Chelicerae with gray patch. Labium, endites gray. Sternum gray anteriorly and on sides. Legs with fine black rings and black spots at origin of macrosetae. Abdomen dorsum orange-white, with posterior longitudinal bands (Fig. 60); venter with a white patch surrounded by black behind epigynum, lateral diagonal bands, and areas with white pigment spots (Fig. 61). Posterior eye row straight. Ocular trapezoid longer than wide, rectangular. Posterior median eyes 1.0 diameter of anterior medians; lateral eyes 0.8 diameter. Anterior median eyes 0.8 diameter apart, 1.0 from laterals. Posterior median eyes 0.8 diameter apart, 1.2 from laterals. Total length 3.8 mm. Carapace 1.3 mm long, 1.1 wide, 0.6 wide behind lateral eyes, 0.7 high. First femur 1.8 mm, patella and tibia 1.8, metatarsus 1.6, tarsus 0.7. Second patella and tibia 1.7 mm, third 1.1, fourth femur 1.8.

The male is not known.

Diagnosis. The epigynum of *M. acaponeta* is distinguished from that of other species by the lateral plates which in ventral view have a median, dark mark and in posterior view a heart-shaped median plate, pointed behind (Fig. 58).

Distribution. Nayarit (Map 1F).

Specimens Examined. No other specimens have been found.

Mangora mobilis (O. P.-Cambridge)

Figures 62–70; Map 1G

Epeira mobilis O. P.-Cambridge, 1889: 30, pl. 6, fig. 1, ♀. Female specimens from Ciudad in Durango [Mexico] and Motagua Valley, Chicoyoto [? Chiquito], Guatemala in the BMNH, examined, probably not syntypes. Keyserling, 1892: 240, pl. 12, fig. 179, ♀.

Mangora mobilis:—F. O. P.-Cambridge, 1904: 479,

pl. 45, figs. 16, 17, ♀♂. Additional locality from Teapa in Tabasco, Mexico. Platnick, 2004.

Note. The syntypes are lost. The specimen surviving and labeled *mobilis* is the one from Teapa, examined by F. O. P. Cambridge.

Description. Female from Jalisco. Pro-soma light orange, with a gray longitudinal line through middle of carapace. Dorsum of abdomen with three gray lines posteriorly, and posterior black laterally; white pigment spots in light areas (Fig. 65). Venter with patch of white pigment spots behind epigynum on black venter (Fig. 66). Posterior eye row straight. Median eye trapezoid square. Posterior median eyes 1.0 diameter of anterior medians; lateral eyes 0.8 diameter. Anterior median eyes 0.8 diameter apart, 1.0 from laterals. Posterior median eyes 0.8 diameter apart, 1.5 from laterals. Height of clypeus equals 0.8 diameter of anterior median eye. Total length 4.2 mm. Carapace 1.7 mm long, 1.4 wide, 0.7 wide behind eyes, 0.8 high. First femur 1.9 mm, patella and tibia 2.3, metatarsus 1.8, tarsus 0.8. Second patella and tibia 2.2 mm, third 1.2, fourth 2.2.

Male from Jalisco lighter than female, abdomen with two dorsal bands of white pigment spots; venter without marks. Posterior eye row slightly recurved. Median eye trapezoid wider anteriorly than long. Posterior median eyes 0.8 diameter of anterior medians; lateral eyes 0.6 diameter. Anterior median eyes 0.6 diameter apart, 0.6 from laterals. Posterior median eyes 0.5 diameter apart, 1.3 from laterals. Total length 2.8 mm. Carapace 1.5 mm long, 1.3 wide in thoracic region, 0.4 wide behind lateral eyes, 0.7 high. First femur 1.8 mm, patella and tibia 2.0, metatarsus 1.6, tarsus 0.9. Second patella and tibia 1.6 mm, third 0.9, fourth 1.5.

Variation. Total length of females 3.2–4.3 mm, males 2.4–2.8 mm. Rarely the sternum is black and the legs have small, black patches at the insertion of macrosetae. The illustrations (Figs. 67–70) were from a male from Teapa, Tabasco.

Diagnosis. The epigynum of *M. mobilis*, in posterior view, has the median plate longer than wide (Fig. 63), unlike the related species *M. acaponeta*, *M. distincta*, and *M. amchickeringi*, which have the plate wider than long (Figs. 58, 72, 81). It differs from *M. fascialata*, which has a similar epigynum, by lacking the ventral black lines on the venter of the femora as seen in *M. fascialata* (Fig. 100).

The palpus of the male has a short sclerotized, triangular median apophysis, wider on one end than the other (Fig. 70).

Natural History. Specimens came from tropical, deciduous forest in Jalisco; pine forest in Chiapas.

Distribution. Mexico to western Honduras (Map 1G).

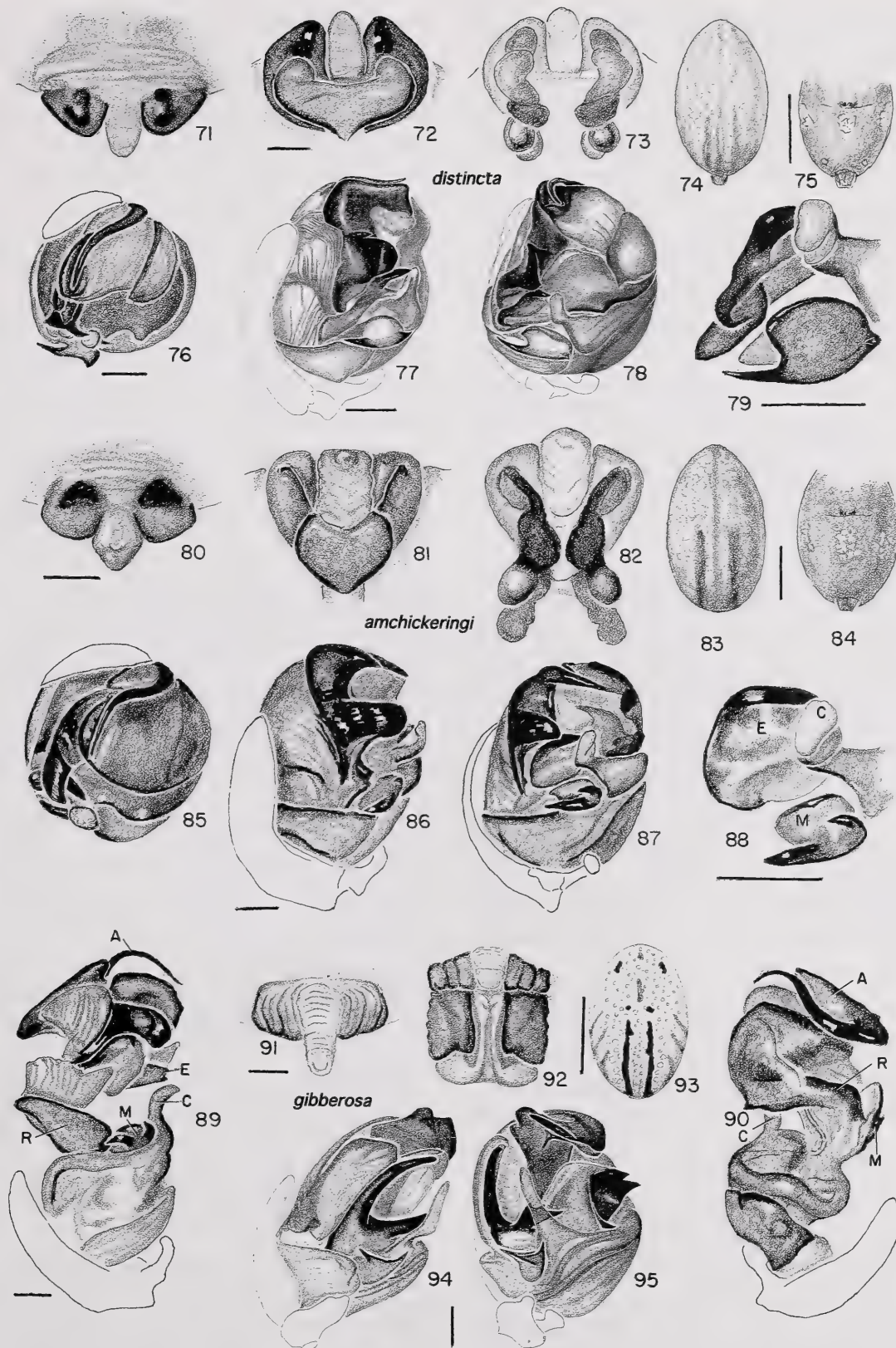
Specimens Examined. MEXICO *Tamaulipas*: 3.2 km E Nuevo Morelos, 2 Dec. 1939, 1♀ (L. I. Davis, AMNH); Nacimiento del Río Frío, nr. Gomez Farias, 23°1'N, 99°1'W, 6, 7 June 1983, 1♀ (W. Maddison, MCZ); 9.6 km E Villa Juarez, 7 July 1941, 7♀ (L. I. Davis, AMNH); ridge betw. Antiguo Morelos and Nuevo Morelos, 18 Nov. 1948, 1♀ (H. B. Leech, CAS). *Coahuila*: 19.8 km S Saltillo, 4 July 1985, 1♀ (J. Woolley et al., AD). *Sonora*: 13 km W Alamos, 23 Aug. 1965, 1♂ (W. J. Gertsch et al., AMNH). *San Luis Potosí*: Ciudad del Maiz, 760 m, 28 July 1953, 1♂ (C. J. Goodnight, AMNH); El Salto, 21–23 June 1955, 1♀ (C., P. Vaurie, AMNH); Huichichuyan, 19 May 1952, 1♀, 1♂ (W. J. Gertsch et al., AMNH); Limonoito, 16 Aug. 1964, 1♀, 1♂ (J. W. Ivie, AMNH); Pícolo, 21 May 1952, 1♀, 1♂ (M. Cazier et al., AMNH); Pujal, 19 May 1952, 1♀ (W. J. Gertsch, AMNH); 13 km W San Joaquin, 19 Apr. 1963, 1♀, 1♂ (W. J. Gertsch, W. Ivie, AMNH); Tamazunchale, 8 July 1944, 2♀ (L. I. Davis, AMNH); 23 Nov. 1946, (E. S. Ross, CAS); 20 May 1952, many ♀♂ (W. J. Gertsch et al., AMNH); 20 July 1956, 1♀, 2♂ (W. Gertsch, V. Roth, AMNH); 13 km NNW Tamazunchale, 19 Apr. 1963, 1♂ (W. J. Gertsch, W. Ivie, AMNH); 1.6 km SW Tamazunchale, 29 July 1966, 1♀ (J., W. Ivie, AMNH); Valles, 1961, 1♂ (L. Staude, AMNH); 19 July 1956, 1♀, 3♂ (W. J. Gertsch, V. Roth, AMNH); 15 Aug. 1964, 1♂ (J., W. Ivie, AMNH); Valles El Bañito, 27 June, 1940, 1♀ (H. Hoogstraal, MCZ); 8 km N Valles, 17 Apr. 1938, 1♀ (L. I. Davis, AMNH); 32 km S Valles, 14 Apr. 1946, 1♂ (A. M., L. I. Davis, AMNH); Volcán San Martín, nr. San Andrés, 1,520 m, 14 July 1953, 1♀ (C. J. Goodnight, AMNH). *Durango*: 56 km N Villa Juarez, 17 Apr. 1938, 1♀ (L. I. Davis, AMNH); 1 km S Villa Juarez, 17 Apr. 1938, 2♀ (A. M., L. I. Davis, AMNH). *Sinaloa*: Mazatlán, 6 Sep. 1956, 1♂ (A. F. Archer, AMNH); 3.2 km S Elota, 23°55'N, 106°48'W,

11 Sep. 1966, 1♂ (J., W. Ivie, AMNH). *Nayarit*: La Libertad, 6 Aug. 1947, 1♀, 1♂ (J. Goodnight, B. Malkin, AMNH); San Blas, Manbauchen Beach, 9 Sep. 1966, 1♂ (J., W. Ivie, AMNH); 16 km E San Blas, 12 Aug. 1954, 1♀ (R. E. Ryckman et al., AMNH). *Jalisco*: El Limón, 720 m, 19°47'N, 104°03'W, 6 Dec. 1996, 1♀ (Alvarez, Castello, MCZ); 2 Aug. 1997, 1♂; 31 Aug. 1997, 3♀ (F. Alvarez, MCZ); Esta. Biol. Chamela, 100 m., Sep. 1988, 1♀ (W. Eberhard 3515, MCZ); Sep. 1988, 1♀ (W. Eberhard SAE-12B, MCZ); Sep. 1989, 1♂; Sep. 1990, 1♀, 3♂ (W. Eberhard, MCZ); Chamela Station, Aug. 1992, 1♂ (W. Eberhard, MCZ); Puerto Vallarta, Sep. 1957, 1♀ (J. A. Comstock, CUC); hillside above Plan de Barrances, 21°01'N, 104°05'W, 8 Sep. 1966, 2♂ (J., W. Ivie, AMNH). *Colima*: Potrero Grande, 15 Jan. 1943, 1♀ (F. Bonet, AMNH); Orilla Río America, Tecoman, 18 Jan. 1943, 1♀ (F. Bonet, AMNH); Tecolapa, 31 July 1954, 2♀, 1♂ (W. J. Gertsch, AMNH). *Veracruz*: Acayucan, 25 Oct. 1957, 1♀ (R. R. Dreisbach, MCZ); 6.4 km NE Acayucan, 27 Apr. 1963, 1♂ (W. J. Gertsch, W. Ivie, AMNH); Alamo, 17 Oct. 1947, 1♀, 1♂ (H. Wagner, AMNH); Catemaco, Playa Azul, 9 Aug. 1966, many ♀♂ (J., W. Ivie, AMNH); Fortín, 25 July 1956, many ♀♂ (V. Roth, W. J. Gertsch, AMNH); 5 Aug. 1966, 3♀ (J. W. Ivie, AMNH); Córdoba, 11–13 May 1946, many ♀♂ (J. C., D. L. Pallister, AMNH); 21 Sep. 1984, 1♀, 1♂ (C. W. Agnew et al., AD); 4.8 km NE Huatusco, 22 July 1985, 1♀ (J. Woolley et al., AD); La Buena Ventura, July 1909, many ♀♂ (A. Petrunkevitch, AMNH); Lake Catemaco, 330 m, 26 July 1955, 1♀ (C., P. Vaurie, AMNH); Los Tuxtlas, 15 km N Catemaco, Aug. 1986, 1♀ (W. Eberhard, MCZ); July 1990, 1♀ (B. Traw, MCZ); Mantla, 1, 2 July 1946, many ♀♂ (H. Wagner, AMNH); Martínez de la Torre, 4, 5 July 1946, 2♀, 2♂ (H. Wagner, AMNH); Papantla, 12 Oct. 1947, many ♀♂ (H. Wagner, AMNH); 24 Aug. 1946, 3♀ (J. Goodnight et al., AMNH); Plan del Río, 26 July 1956, 1♀ (V. Roth, W. J. Gertsch, AMNH); Potrero, 24 June 1936, 1♀ (L. I. Davis, AMNH); San Rafael [Carretore, Mantla Martínez], 3 July 1946, 2♀, 1♂ (H. Wagner, AMNH); 4 km N Sontecomapan, 21 Aug. 1967, 1♀ (R. E. Leech, CNC); Tecolutla, 13 Oct. 1947, many ♀♂ (H. Wagner, AMNH); Tierra Colorado, 26 July 1956, 1♂ (W. J. Gertsch, V. Roth, AMNH); Tlapacoyan, 300 m, 7, 8 July, 1946, many ♀♂ (H. Wagner, AMNH). *Michoacan*: 78 km SE Aquila, 13 July 1984, 1♂ (J. Woolley, AD); 16 km S Uruapan, 6, 7 July 1985, 2♀ (J. Woolley et al., AD). *Puebla*: Acatlan, 24–27 Sep. 1946, 1♀ (H. Wagner, AMNH). *Guerrero*: Arcelio, 400 m, 2 Nov. 1947, 2♀ (H. Wagner, AMNH); Iguala, 730 m, 27 Oct. 1947, 1♂ (H. Wagner, AMNH); 1.6 km NE La Laguna, 17 July 1984, 2♀, 1♂ (J. Woolley,

AD). *Oaxaca*: Huajuapán, 27 Sep.–1 Oct. 1946, 1♀ (H. Wagner, AMNH); Jalapa, 28 Aug. 1947, 3♀, 1♂ (H. Wagner, AMNH); San Felipe, nr. Oaxaca City, 1,700 m, 6 Oct. 1946, 3♀ (H. Wagner, AMNH); Papaloapan, 24, 25 July 1946, 1♀ (H. Wagner, AMNH); Paso Real, Río Tonto, 28, 29 July 1946, many ♀♂ (H. Wagner, AMNH); Playa Hati, Río Tonto, 27 July 1946, many ♀♂ (H. Wagner, AMNH); Puerto Escondido, 15 July 1985, 1♂ (J. Woolley et al., AD); 7 km NE San Pedro Mixtepec, 16 July 1985, 1♂ (J. Woolley et al., AD); Soyaltepec, 1, 2 Aug. 1946, many ♀♂ (H. Wagner, AMNH); Tehuantepec, 26 Aug. 1947, many ♀♂ (H. Wagner, AMNH); Tuxpan, 15 Oct. 1947, many ♀♂ (H. Wagner, AMNH); Tuxtilla, 23 July 1946, 3♀, 3♂ (H. Wagner, AMNH); 22 km W Zanatepec, 28 Aug. 1967, ♀ (R. E. Leech, REL). *Tabasco*: Villahermosa (La Venta), 18°00'N, 92°53'W, 13 Aug. 1966, 1♀ (J. W. Ivie, AMNH). *Campeche*: Campeche, 27, 28 Oct. 1946, 2♀ (H. Wagner, AMNH); San José, Dec. 1946, 2♀, 1♂ (H. Wagner, AMNH). *Yucatan*: Piste, 4–8 June 1959, 1♀ (C., P. Vaurie, AMNH); 4 km N of Xocenpich, 12 km N of Piste, ca. 20°47'N, 88°34'W, 20 July 1983, 1♀, 1♂ (W. Maddison, MCZ); Uxmal, 18 Aug. 1949, 1♂ (C. J. Goodnight, AMNH). *Chiapas*: Arriaga, low coast, 1, 2 Sep. 1947, 3♀, 4♂ (H. Wagner, AMNH); 24 km NW Arriaga, 27 Aug. 1966, 5♀ (J., W. Ivie, AMNH); Chiapa, 6 Sep. 1947, 1♀, 3♂ (H. Wagner, AMNH); Cintalapa, 17 Sep. 1947, 3♀, 1♂ (H. Wagner, AMNH); Escuintla, 1♀, 3♂ (N. Banks, MCZ); 3♂ (Crawford, MCZ); Las Cruces, 15–18 Sep. 1947, 2♀ (H. Wagner, AMNH); Puerto Madero [Puerto de San Benito], 2 Aug. 1950, 2♂ (C., M. Goodnight, AMNH); Ocosingo, 24, 25 June 1950, 4♀ (C., M. Goodnight et al., AMNH); Río de Las Flores, 15 Sep. 1947, 3♂ (H. Wagner, AMNH); Río San Gregorio, km 1,327, betw. Comitán and Ocotlán, 18 July 1950, 1♂ (C., M. Goodnight, AMNH); nr. Simojovel, 4 Aug. 1964, 1♀ (J. Shatterly, MCZ); Tonala, Aug. 1909, 1♀, 1♂ (A. Petrunkevitch, AMNH). **GUATEMALA** *Baja Verapaz*: San Jerónimo, 24, 26 July 1947, 1♀ (C., P. Vaurie, AMNH). *Chiquimula*: Chiquimula, 375 m, 21–23 July 1947, 1♀ (C., P. Vaurie, AMNH). *Suchitepequez*: Variedades, 1–4 July 1947, 1♀ (C., P. Vaurie, AMNH). **EL SALVADOR** Santa Tecla [13°41'N, 89°17'W], 15 Oct. 1949, 1♀ (J. Boursot, AMNH). **HONDURAS** *Copán*: Copán, El Cedro, March 1939, 1♂ (AMNH); Copán ruins, 7 March 1939, 1♀ (R. V. Chamberlin, AMNH).

Mangora distincta Chickering Figures 71–79; Map 1H

Mangora distincta Chickering, 1963: 6, figs. 8–11, ♂.
Male holotype from Escuela Agricultura Panamer-



Figures 80–90, *Mangora amchickeringi* new species. 80–84, female. 80–82, epigynum. 80, ventral. 81, posterior. 82, posterior, cleared. 83, abdomen, dorsal. 84, abdomen, ventral. 85–90, male, palpus. 85, apical. 86, mesal. 87, ventral. 88, median apophysis, conductor and embolus. 89, 90, left palpus, expanded.

Figures 91–95. *Mangora gibberosa* (Hentz). 91–93, female. 91, 92, epigynum. 91, ventral. 92, posterior. 93, abdomen, dorsal. 94, 95, male, palpus. 94, mesal. 95, ventral.

Scale lines: 1.0 mm, genitalia 0.1 mm.

Abbreviations: A, terminal apophysis; C, conductor; E, embolus; M, median apophysis; R, radix.

icana, San Antonio de Oriente, 27 km S [east] of Tegucigalpa, Honduras in MCZ, examined. Platnick, 2004.

Note. Chickering (1954, 1963) did not mention *M. mobilis* in his long description of the very similar *M. distincta* and gives no differential characters. He illustrated the palpus of *M. mobilis* from one side, and that of *M. distincta* from another.

Description. Female from Nicaragua. Prosoma light orange. Abdomen orange-white with white pigment spots and with posterior median three indistinct longitudinal lines (Fig. 74); venter with small area of white pigment spots behind epigynum, and two areas of white pigment spots on each side (Fig. 75). Posterior eye row slightly recurved. Ocular trapezoid longer than wide, about rectangular. Posterior median eyes 1.3 diameters of anterior medians; anterior lateral eyes 0.6, posterior 1.0. Anterior median eyes 1.0 diameter apart, 1.5 from laterals. Posterior median eyes 0.5 diameter apart, 1.2 from laterals. Height of clypeus equals 0.8 diameter of anterior median eyes. Total length 4.2 mm. Carapace 1.7 mm long, 1.4 wide in thoracic region, 0.7 wide behind eyes, 0.7 high. First femur 2.0 mm, patella and tibia 2.2, metatarsus 1.8, tarsus 0.8. Second patella and tibia 1.9 mm, third 1.3. Fourth femur 2.0 mm, patella and tibia 2.0, metatarsus 1.7, tarsus 0.7.

Male holotype. Coloration as in female. Posterior eye row slightly recurved. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 1.0 diameter of anterior medians; laterals 0.7. Anterior median eyes 0.7 diameter apart, 0.7 from laterals. Posterior median eyes 0.4 diameter apart, 1.2 from laterals. Total length 2.4 mm. Carapace 1.2 mm long, 0.9 wide behind eyes, 0.4 wide behind lateral eyes, 0.5 high. First femur 1.4 mm, patella and tibia 1.5, metatarsus 1.3, tarsus 0.6. Second patella and tibia 1.3 mm, third 0.9, fourth 1.3.

Variation. Total length of females 3.2–4.5 mm, males 2.3–2.8 mm. The illustrations were made from females from Nic-

aragua, and the palpus from the male holotype.

Diagnosis. The epigynum of *M. distincta* is distinguished from epigyna of *M. mobilis* and *M. amchickeringi* by the wide, transverse median posterior plate having two lateral lobes (Fig. 72).

Males differ from these two species by the curved “upper” edge of the median apophysis (Fig. 79).

Natural History. Specimens have been found in dry forests on Volcán Mombacho, in malaise traps; from undergrowth in coffee plantation; in tropical dry forest remnants and organic coffee plantation in Nicaragua.

Distribution. From southeastern Honduras to Costa Rica (Map 1H).

Specimens Examined. NICARAGUA Islas de Solentiname, 30 July 1989, 1♀ (J. Maes, JM); Apanas, 15 July 1989, 1♂ (F. Reinbold, JM); Masaya Las Flores, 1 Aug. 1994, 1♂ (J. M. Maes, JM); 50 km E Metagalpa, El Coyolar, 800 m, 20 Nov. 1991, 3♂ (J. Maes, JM); San Ramon de Tres Ríos, Sep. 1991, 1♀ (J. M. Maes, JM). GRANADA: Volcán Mombacho, Mar.–Aug. 1998, 2♀, 14♂ (J. M. Maes, MCZ). COSTA RICA *Guanacaste*: Bagaces, Palo Verde, 16–22 Jan. 1978, 3♀, 1♂ (W. Eberhard 1316, MCZ); Río Portrero, Bagaces, 7 July 1966, 1♀ (S. Peck, AMNH); ca. Cañas, 100 m, Nov. 1982, 1♀ (W. Eberhard, MCZ); 9.5 km W Cañas, Taboga, 10°19'N, 85°09'W, 1967, 1♀ (J. Nelson, MCZ). *San José*: San José, 1♂ (E. Schmidt, MCZ).

Mangora amchickeringi new species

Figures 80–90; Map 1I

Holotype. Female holotype, 17 male and 39 female paratypes from Madden Dam, Canal Zone, Panama, July 1950 (A. M. Chickering) in MCZ. The species is named after the collector, arachnologist A. M. Chickering.

Mangora mobilis:—Chickering, 1954: 202, figs. 10–14, ♀♂ (misidentification).

Description. Female holotype. Carapace yellow. Abdomen speckled white except midline, with posterior pair of longitudinal black bands (Fig. 83); venter with a patch of white spots behind epigynum and white spots on sides (Fig. 84). Posterior eye row straight. Ocular trapezoid longer than wide, rectangular. Posterior median eyes 1.3 diameters of anterior medians; lateral

eyes 0.8 diameter. Anterior median eyes 0.8 diameter apart, 1.1 from laterals. Posterior median eyes 0.5 diameter apart, 1.1 from laterals. Height of clypeus equals 0.8 diameter of anterior median eyes. Total length 3.9 mm. Carapace 1.7 mm long, 1.4 wide in thoracic region, 0.7 wide behind lateral eyes, 0.7 high. First femur 2.2 mm, patella and tibia 2.3, metatarsus 1.9, tarsus 0.8. Second patella and tibia 2.0 mm, third 1.2. Fourth femur 2.1 mm, patella and tibia 2.2, metatarsus 1.8, tarsus 0.8.

Male paratype. Coloration as in female, except abdomen has a pair of longitudinal, dorsal bands with white pigment spots. Posterior eye row slightly procurved. Ocular trapezoid longer than wide, rectangular. Posterior median eyes 1.2 diameters of anterior medians; lateral eyes 0.6 diameter. Anterior median eyes 0.7 diameter apart, 1.0 from laterals. Posterior median eyes 0.6 diameter apart, 1.3 from laterals. Height of clypeus equal to 0.8 diameter of anterior median eye. Total length 2.6 mm. Carapace 1.3 mm long, 1.1 wide in thoracic region, 0.4 wide behind lateral eyes, 0.5 high. First femur 1.6 mm, patella and tibia 1.8, metatarsus 1.4, tarsus 0.7. Second patella and tibia 1.5 mm, third 0.8, fourth 1.4.

Variation. Total length of females 3.2–4.2 mm, males 2.3–2.8 mm. *Mangora amchickeringi* has less black pigment than *M. mobilis*, but coloration is variable. The female dark, abdominal band is present in most males. The illustrations were made from female holotype and male paratype.

Diagnosis. Ventrally the epigynum of *M. amchickeringi* is like that of *M. mobilis*; however, in posterior view it differs by having a transverse V-shaped, median plate without folds or lobes (Fig. 81), whereas that of *M. mobilis* is longer than wide with many folds (Fig. 63) and the median plate of *M. disticta* has lateral lobes (Fig. 72).

The male differs by having the two teeth of the median apophysis large and directed toward the cymbium, and by the straight

“upper” edge of the median apophysis (Fig. 88).

Natural History. Fogging trees in middle savanna in Calabozo, Venezuela, has collected the species.

Distribution. Panama to Venezuela, Trinidad (Map 11).

Paratypes. PANAMA *Bocas del Toro*: Río Changuinola, Campamento Irie, 13–17 Mar. 1980, 1 ♀ (R. Ibáñez, MCZ). *Cocle*: Cermeño, Feb. 1940, 1 ♀ (A. M. Chickering, MCZ). *Panamá*: Barro Colorado Isl., several collections (A. M. Chickering, MCZ); Madden Dam, many collections (A. M. Chickering, MCZ); Summit, July 1950, many ♀ ♂; Aug. 1950, 1 ♀ (A. M. Chickering, MCZ); Chilibre, July 1950, 1 ♂ (A. M. Chickering, MCZ); Experimental Gardens, 29 July 1954, 1 ♀; 12 Aug. 1954, 1 ♀ (A. M. Chickering, MCZ).

WEST INDIES. TRINIDAD St. Augustine University, April 1964, 1 ♀, 3 ♂ (A. M. Chickering, MCZ); Port of Spain, 1913, 1 ♀, 3 ♂ (R. Thaxter, MCZ); Gasparce, 3 Nov. 1944, 1 ♀ (R. H. Montgomery, AMNH). *St. George Co.*: Diego Martin Ward, Edith Falls, Trail, 18 Aug. 1986, 1 ♂ (G. B. Edwards, FSCA); San Rafael Ward, E side of Talparo River, 20 Aug. 1986, 1 ♂ (G. B. Edwards, FSCA). *St. Andrew Co.*: Valencia Ward, at Oropuche River, 17 Aug. 1986, 1 ♂ (G. B. Edwards, FSCA).

VENEZUELA *Bolívar*: San Felix, Oct.–Dec. 1947, 1 ♀ (AMNH). *Guarico*: Estacion Biológica de los Llanos, Calabozo, 280 m, 18 Jan. 1985, 1 ♀ (J. Palmer, MCZ); Hato Masaquarai, 45 km S of Calabozo, 17 Mar. 1980, 1 ♀ (K. Rabenold, MCZ). COLOMBIA *Magdalena*: 10 km E Santa Marta, Oct. 1985, 1 ♀ (H.-G. Müller, SMF).

Mangora gibberosa (Hentz)

Figures 91–96; Map 1J

Epeira gibberosa Hentz, 1847: 477, pl. 31, fig. 20, ♀.

Types from Alabama, destroyed.

Mangora gibberosa:—Levi, 1975, figs. 118–130, ♀ ♂, map 4. Platnick, 2004.

Description. Description is found in Levi (1975).

Diagnosis. Unlike other *Mangora*, except *M. fascialata* (Fig. 100), specimens have the venter of the first and second femora with a black line.

The female differs from *M. fascialata* by having, in posterior view, rectangular lateral plates (Fig. 92).

The male differs, in apical view of the palpus (Fig. 96), by lacking the wide band present in *M. fascialata* (Fig. 101).

Distribution. Southeastern Canada, eastern United States, only one record from Mexico (Map 1J).

Additional record. MEXICO *Tamaulipas*: Nueva Laredo, 22 July 1946, 1♀ (J. C., D. L. Pallister, AMNH).

***Mangora fascialata* Franganillo**
Figures 97–103; Map 2A

Mangora fascialata Franganillo, 1936: 83. Specimens came from Cuba. Levi, 1975: 128, figs. 110–117, ♀♂. Platnick, 2004.

Mangora striatipes Bryant, 1945: 375, figs. 17, 18, ♀♂. Male holotype from Puerto Plata, Dominican Republic, in MCZ, examined. Synonymized by Levi, 1975.

Mangora conspicua Chickering, 1963: 191, pl. 2, figs. 1–7, ♀♂. Female holotype from El Potosí, Nuevo León, Mexico, in MCZ, examined. Synonymized by Levi, 1975.

Description. Female from Nuevo León. Carapace whitish with a median dusky line. Legs whitish with a median black line under the first and second femora (Fig. 100); other articles with black patches. Abdomen light with marks as in Figures 99 and 100. Posterior eye row straight. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 0.9 diameter of anterior medians; lateral eyes 0.7 diameter. Anterior median eyes 1.0 diameter apart, 1.0 from laterals. Posterior median eyes 0.8 diameter apart, 1.0 from laterals. Total length 3.6 mm. Carapace 1.4 mm long, 1.0 wide in thoracic region, 0.6 wide behind lateral eyes, 0.7 high. First femur 1.7 mm, patella and tibia 1.5, metatarsus 1.4, tarsus 0.7. Second patella and tibia 1.4 mm, third 0.9, fourth 1.5.

Male from Haiti. Coloration lighter than in female. Posterior eye row straight. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 1.0 diame-

ter of anterior medians; lateral eyes 0.6 diameter. Anterior median eyes 1.0 diameter apart, 1.0 from laterals. Posterior median eyes 0.4 diameter apart, 1.5 from laterals. Total length 2.2 mm. Carapace 1.2 mm long, 1.0 wide in thoracic region, 0.4 wide behind lateral eyes, 0.6 high. First femur 1.2 mm, patella and tibia 1.2, metatarsus 1.0, tarsus 0.5. Second patella and tibia 1.1 mm, third 0.6, fourth 1.1.

Variation. Total length of females 2.8–3.7 mm, males 2.1–2.3 mm.

Diagnosis. *Mangora fascialata* is the only species known from the West Indies (except Trinidad). As in *M. gibberosa*, it has a distinct black line along the venter of the first and second femora (Fig. 100).

The lightly sclerotized epigynum is distinguished from others by the presence of a scape and distinctly curved, lateral plates surrounding the median plate in posterior view (Fig. 98). The black line on the venter of the femora of *M. fascialata* prevents confusion with the similar *M. mobilis*.

Males have four or five macrosetae on the venter of the second tibia, and are further distinguished by the numerous sclerites in the palpus (Figs. 101–103). In apical view the palpus has a structure that looks like a wide, tucked-in band (Fig. 101).

Natural History. Specimens came from cane and mesquite along river in Texas; on low shrubs and herbs in Bocatoma, Tamaulipas, and in creek bed in Nuevo León.

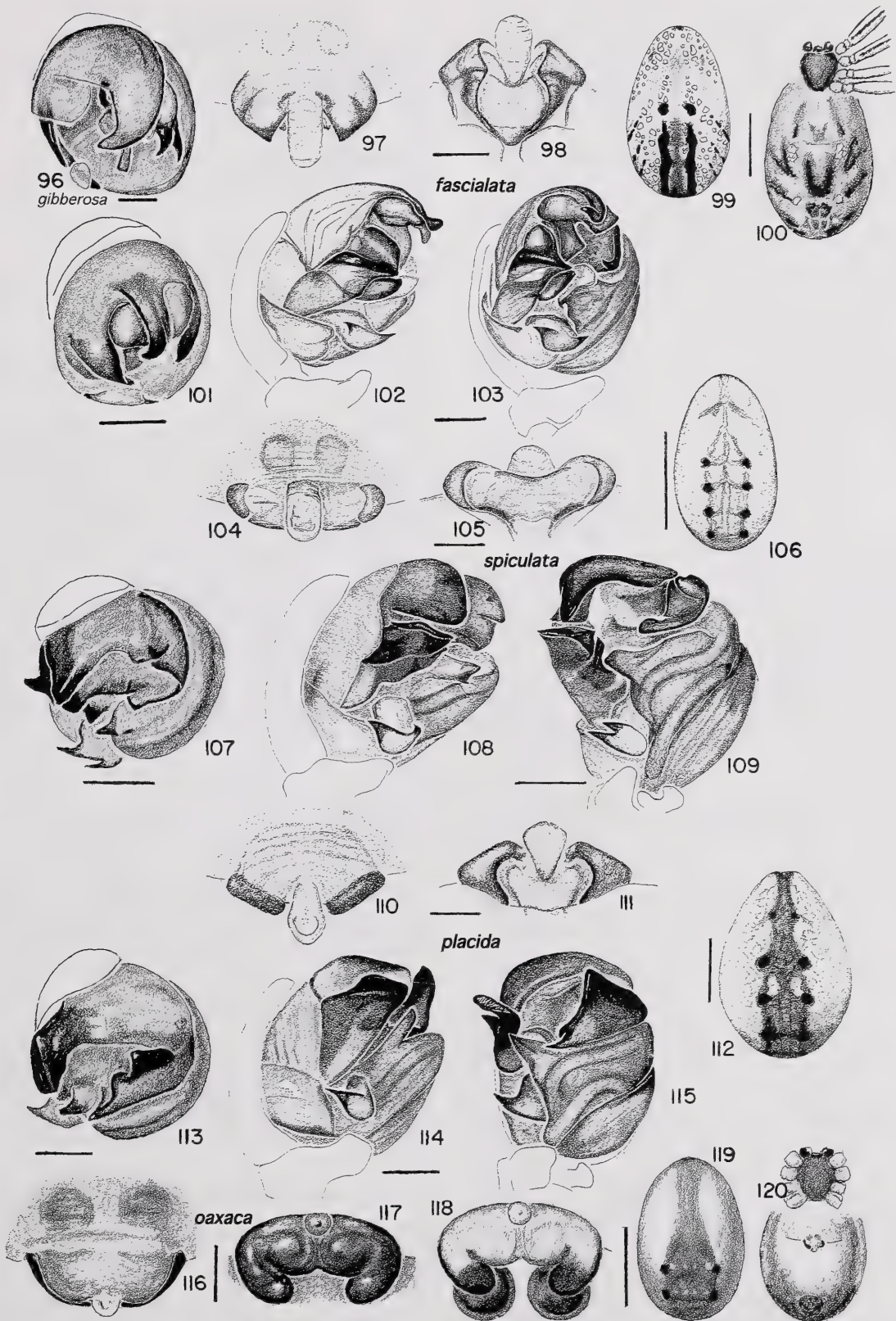
Distribution. Texas, Mexico to Honduras, Greater Antilles (Map 2A).

Specimens Examined. TEXAS *Comal Co.*: New Braunfels, 7 June 1942, 1♀ (E. S. Ross, CAS). *Brewster Co.*: Big Bend National Park, Boquillas Camp, 24, 25 May 1967 (E. Sabath, MCZ). MEXICO *Ta-*

Figure 96. *Mangora gibberosa* (Hentz), male, left palpus, apical.

Figures 97–103. *Mangora fascialata* Franganillo. 97–100, female. 97, 98, epigynum. 97, ventral. 98, posterior. 99, abdomen, dorsal. 100, abdomen, sternum, and proximal parts of left legs, ventral. 101–103, male, palpus. 101, apical. 102, mesal. 103, ventral.

Figures 104–109. *Mangora spiculata* (Hentz). 104–106, female. 104, 105, epigynum. 104, ventral. 105, posterior. 106, abdomen, dorsal. 107–109, male, palpus. 107, apical. 108, mesal. 109, ventral.



Figures 110–115. *Mangora placida* (Hentz). 110–112, female. 110, 111, epigynum. 110, ventral. 111, posterior. 112, abdomen, dorsal. 113–115, male, palpus. 113, apical. 114, mesal. 115, ventral.

Figures 116–120. *Mangora oaxaca* new species, female. 116–120, epigynum. 116, ventral. 117, posterior. 118, posterior, cleared. 119, abdomen, dorsal. 120, abdomen and sternum, ventral.

Scale lines: 1.0 mm, genitalia 0.1 mm.

maulipas: Bocatoma, 26 Feb. 1976, 1♀ (W. B. Peck, CAS); 1.6 km S Antigua Morelos, 21 July 1954, 1♀ (Chilcott, CNC); Padilla, 17 May 1952, 2♂ (W. J. Gertsch et al., AMNH); NE of Padilla, 24°03'N, 98°03'W, 21 July 1966, 1♂ (J., W. Ivie, AMNH); Victoria, 17 May 1952, 1♂ (W. J. Gertsch et al., AMNH); Villagrán, 19 July 1956, 1♂ (V. Roth, W. Gertsch, AMNH). *Nuevo León*: Linares, 3 July 1941, 2♀, 1♂ (L. I. Davis, MCZ); Los Cristales, Aug. 1972, 1♀ (A. F. Archer, AMNH); Sabinas Hidalgo, 13 June 1940, 2♀ (H. Hoogstraal, MCZ); Villa de Santiago, Hacienda Vista Hermosa, 19 June 1940, 1♀, 1♂ (H. Hoogstraal, MCZ); El Potosí, Cerro Potosí, 13 June 1938, 1♀ (Hoogstraal, MCZ); Montemorelos, 23 May 1952, 1♀ (W. J. Gertsch et al., AMNH). *Coahuila*: Saltillo, 23 Aug. 1947, 1♀ (W. J. Gertsch, AMNH); 20 km S Saltillo, 4 July 1985, 1♀ (J. Woolley et al., AD). *Baja California Sur*: 10 km S San Antonio, 31 Dec. 1976, 1♂ (C. Griswold, L. Vincent, CAS). Sierra San Lázaro, 1♀ (N. Banks, MCZ). *San Luis Potosí*: 4.2 km E Ciudad del Maiz, 29 Nov. 1950, 1♀ (A. M. Davis, AMNH); Valles, 45.6 km S Huizache, 4 July 1985, 1♂ (J. Woolley et al., AD); 19 July 1956, 1♀, 1♂ (V. Roth, W. J. Gertsch, AMNH); 11 km S Tamazunchale, 16 Feb. 1961, 1♀ (D., H. Campbell, CAS). *Durango*: Santa María del Oro, 1,700 m, 28 July 1947, 1♀ (W. J. Gertsch, AMNH). *Veracruz*: Fortín, 25 July 1956, 1♀ (V. Roth, W. Gertsch, AMNH); 4 km NE Huatusco, 22 July 1985, 1♀, 2♂ (J. Woolley et al., AD); Plan del Río, 26 July 1956, 1♀ (V. Roth, W. Gertsch, AMNH); Mirador, Zacualpan, 25 Aug. 1933, 1♂ (W. James, AMNH). *Hidalgo*: Apulco, 6 Oct. 1947, 1♀ (H. Wagner, AMNH); Ixmiquilpan, 16–18 Aug. 1947, 2♀, 1♂ (H. Wagner, AMNH); 3 km SW Jacala, 12 Aug. 1972, 1♂ (G. F. Hevel, USNM). *Guerrero*: 37 km N Chilpancingo, 31 July 1956, 1♂ (V. Roth, W. Gertsch, AMNH); 8 km NE Tixtla de Guerrero, 16 July 1984, 1♀ (J. B. Woolley, AD). *Oaxaca*: 13 km NE El Punto, 18 July 1985, 1♀, 1♂ (J. Woolley et al., AD); Huajuapán, 27 Sep.–1 Oct. 1946, 3♂ (H. Wagner, AMNH); Juan García, 16°31'N, 95°47'W, 1 Sep. 1964, 1♀ (J., W. Ivie, AMNH); Oaxaca, 1,550 m, 2 Oct. 1946, 1♀, 2♂ (H. Wagner, AMNH); 22 Aug. 1947, 1♂ (H. Wagner, AMNH); San Felipe, 24 Aug. 1947, 2♀ (H. Wagner, AMNH). *Yucatan*: Dolores Otero, 13 July 1952, 1♀, 1♂ (J., D. Pallister, AMNH). *Chiapas*: Ocosingo, 900 m, 25 June 1950, 3♀, 1♂ (C., M. Goodnight et al., AMNH); Ocozacoautla, 3 Sep. 1947, 1♀ (H. Wagner, AMNH); Tuxtla Gutiérrez, 9 Sep. 1947, 1♀, 1♂ (H. Wagner, AMNH). HONDURAS 27 km S Tegucigalpa, San Antonio del Oriente, 17 Nov. 1945, 3♀, 1♂ (A., M. Carr, MCZ).

CUBA *Pinar del Río*: Sierra del Rosario, nr. Institute of Botany research area, May 1976, 1♀ (R. Levins, MCZ). *Oriente*: Santiago, June 1967, 1♂ (P. Alayon, MCZ); Loma "La Farola" Baracoa, June 1967, 1♀ (P. Alayon, MCZ). HAITI Las Cayes, Les Platons, Nov. 1971, 2♀ (T. Moermond, MCZ); Diquini, 2♂ (W. M. Mann, MCZ); hills nr. Port of Prince, 2 Oct. 1934, 6♀ (P. Darlington, MCZ); nr. Kenscoff, 1,300

m, 1 May 1935, 1♀ (Roys, MCZ). DOMINICAN REPUBLIC Puerto Plata, Apr.–May 1941, 2♀ (D. Hurst, MCZ). TRINIDAD Port of Spain, 1913, 1♀ (R. Thaxter, MCZ); St. Augustine, 1 Apr. 1964, 1♀ (A. M. Chickering, MCZ).

Mangora spiculata (Hentz) Figures 104–109; Map 1K

Epeira spiculata Hentz, 1847: 475, pl. 31, fig. 13, ♀.
Female holotype destroyed.

Mangora spiculata:—Levi, 1975: 125, figs. 82–89, ♀♂, map 4. Platnick, 2004.

Description. Description is found in Levi (1975).

Diagnosis. The female differs from *M. placida* by having, in ventral view of the epigynum, longitudinal, sclerotized bars at a distance from the scape (Fig. 104).

The median apophysis of the palpus of *M. spiculata* differs from that of *M. placida* by having two spines (6 h in Fig. 108).

Distribution. Eastern United States to southern Texas (Map 1K). No records are known from Mexico, although specimens can be expected there.

Mangora placida (Hentz) Figures 110–115; Map 2B

Epeira placida Hentz, 1847: 475, pl. 31, fig. 12, ♀.
Female holotype from Alabama, destroyed.

Mangora placida:—Levi, 1975: 126, figs. 80, 81, 90–101, ♀♂; map 4. Platnick, 2004.

Description. Description is found in Levi (1975).

Diagnosis. In ventral view of the epigynum, the female differs from *M. spiculata* by having diagonal bars flanking the scape (Fig. 110).

The median apophysis of the palpus of the male has one spine (6 h in Fig. 114), whereas that of *M. spiculata* has two spines (Fig. 108).

Distribution. Southeastern Canada, eastern United States to Nuevo León, Mexico (Map 2B).

Additional Record. MEXICO *Nuevo León*: Linares, 8 July 1941, 3♀ (L. I. Davis, AMNH).

***Mangora oaxaca* new species**

Figures 116–120; Map 2C

Holotype. Female holotype from Finca Patichuiz, SE of Oaxaca, Mexico, 22 Oct. 1962 (Gardner) in MCZ.

Description. Female holotype. Carapace light orange. Large black circles around secondary eyes. Chelicerae dusky orange. Labium, endites black. Sternum black. Legs light orange, distally darker. Abdomen with median dorsal gray band, blackish posteriorly with four black spots (Fig. 119); venter black posteriorly, sides with a gray band (Fig. 120). Posterior eye row procurved. Ocular trapezoid longer than wide, rectangular. Posterior median eyes 1.2 diameters of anterior medians; lateral eyes 0.8 diameter. Anterior median eyes their diameter apart, 1.0 from laterals. Posterior median eyes 0.8 diameter apart, 1.3 from laterals. Total length 3.0 mm. Carapace 1.3 mm long, 1.0 wide in thoracic region, 0.6 wide behind lateral eyes, 0.7 high. First femur 1.5 mm, patella and tibia 1.8, metatarsus 1.4, tarsus 0.7. Second patella and tibia 1.6 mm, third 1.0, fourth 1.5 mm.

The male is not known.

Diagnosis. The abdomen of *M. oaxaca* (Fig. 119) resembles that of *M. placida* but the epigynum of the former is a semicircle having a dark, sclerotized, posterior, lateral black frame (Fig. 116), and the posterior view is heavily sclerotized with two lateral, dorsal lobes (Fig. 117).

Distribution. Oaxaca (Map 2C).

Specimens Examined. No other specimens have been found.

***Mangora nahuatl* new species**

Figures 121–125; Map 2C

Holotype. Female holotype from Jalapa, Veracruz, Mexico, July 1981 (C. Gold) in CAS. The specific name is a noun in apposition after the Indians inhabiting the area of the type locality.

Description. Female holotype. Carapace yellowish with median eye area and clypeus black. Endites, labium, sternum black. Legs yellowish. Abdomen orange-white,

with posterior median black area, and areas with white pigment spots and gray chevron marks (Fig. 124); sides with a black patch; venter with a median gray area (Fig. 125). Posterior eye row straight. Ocular trapezoid square. Posterior median eyes 1.5 diameters of anterior medians; lateral eyes 1.0 diameter. Anterior median eyes 1.3 diameter apart, 1.0 from laterals. Posterior median eyes 0.5 diameter apart, 0.7 from laterals. Total length 2.8 mm. Carapace 1.3 mm long, 0.9 wide in thoracic region, 0.5 wide behind lateral eyes, 0.7 high. First femur 1.3 mm, patella and tibia 1.4, metatarsus 1.1, tarsus 0.5. Second patella and tibia 1.3 mm, third 0.8, fourth 1.3 mm.

The male is not known.

Diagnosis. The dorsal abdominal markings of *M. nahuatl* (Fig. 124) differ from those of *M. passiva* (Fig. 152). Also, in posterior view of the epigynum, the median plate is wider (Fig. 122), with anterolateral lobes, than that of *M. passiva* (Fig. 149).

Distribution. Veracruz, México, Mexico.

Specimen Examined. MEXICO México: Tenango de Valle, 2,400 m, 26–29 Aug. 1946, 1 ♀ (H. Wagner, AMNH).

***Mangora volcan* new species**

Figures 126–130; Map 2D

Holotype. Female holotype and an immature paratype from El Volcán, Chiriquí, Panama, 24 Feb. 1936 (W. J. Gertsch) in AMNH. The name is a noun in apposition after the type locality.

Description. Female holotype. Carapace pale yellow with eye region black. Labium, endites, sternum black. Coxae pale yellowish, distal leg articles gray. Abdomen whitish with a dorsal, posterior black band that fades anteriorly (Fig. 129); sides each with a black patch; venter with a gray area in middle and black around epigynum (Fig. 130). Posterior eye row straight. Ocular trapezoid slightly wider than long, widest anteriorly. Posterior median eyes 1.0 diameter of anterior medians; lateral eyes 0.7 diameter. Anterior median eyes 1.0 diameter apart, 1.0 diameter from laterals.

Posterior median eyes 0.8 diameter apart, 1.0 from laterals. Total length 2.2 mm. Carapace 1.0 mm long, 0.8 wide in thoracic region, 0.4 wide behind lateral eyes, 0.4 high. First femur 1.0 mm, patella and tibia 1.2, metatarsus 1.0, tarsus 0.5. Second patella and tibia 1.1 mm, third 0.6, fourth 1.0.

The male is not known.

Diagnosis. *Mangora volcan* has the scape of the epigynum almost spherical (Fig. 126), and in posterior view, has a wide trapezoid median plate (Fig. 127). In coloration it is unlike any other Central American species (Figs. 129, 130).

Distribution. Chiriquí, Panama (Map 2D).

Specimens Examined. No other specimens have been found.

***Mangora fortuna* new species**
Figures 131–135; Map 2D

Holotype. Female holotype from El Fortuna, 1,100–1,200 m, Chiriquí, Panama, 5 May 1984 (W. Eberhard) in MCZ. The name is a noun in apposition after the name of the type locality.

Description. Female holotype. Prosoma yellowish, darkest in eye region, legs with distal articles dusky. Sternum with a dusky frame, light in center. Dorsum of abdomen with two gray longitudinal bands, most distinct posteriorly (Fig. 134); venter with a V-shaped gray patch anterior to spinnerets and a dusky mark covering epigynum and on each side of the structure (Fig. 135). Posterior eye row slightly procurved. Ocular trapezoid longer than wide, rectangular. Posterior median eyes 1.0 diameter of anterior medians; lateral eyes 0.8 diameter. Anterior median eyes 1.0 diameter apart, 0.4 from laterals. Posterior median eyes 0.8 diameter apart, 0.8 from laterals. Height of clypeus equals 0.8 diameter of

anterior median eyes. Sternum bulging. Total length 2.4 mm. Carapace 1.2 mm long, 0.8 wide in thoracic region, 0.4 wide behind lateral eyes, 0.6 high. First femur 1.2 mm, patella and tibia 1.3, metatarsus 1.1, tarsus 0.6. Second patella and tibia 1.2 mm, third 0.7, fourth 1.2.

The male is not known.

Variation. Total length of females 2.3–2.4 mm. Females may be lighter colored than illustrated (Fig. 134), and the ventral coloration is variable. The illustrations were made from the holotype.

Diagnosis. The epigynum of *M. fortuna* is lightly sclerotized, small, and difficult to study in ventral view (Fig. 131); the oval scape is indistinct unless viewed laterally. The posterior view is more distinct and shows a wide median plate (Fig. 132) more curved than that of *M. volcan* (Fig. 127).

Distribution. Costa Rica, western Panama (Map 2D).

Paratypes. COSTA RICA *Heredia*: La Selva nr. Puerto Viejo, Feb. 1981, 1♀ (W. Eberhard, MCZ); 26 March 1979, 1♀ (J. Coddington, MCZ); 22 Nov. 1981, 1♀ (J. Coddington, MCZ).

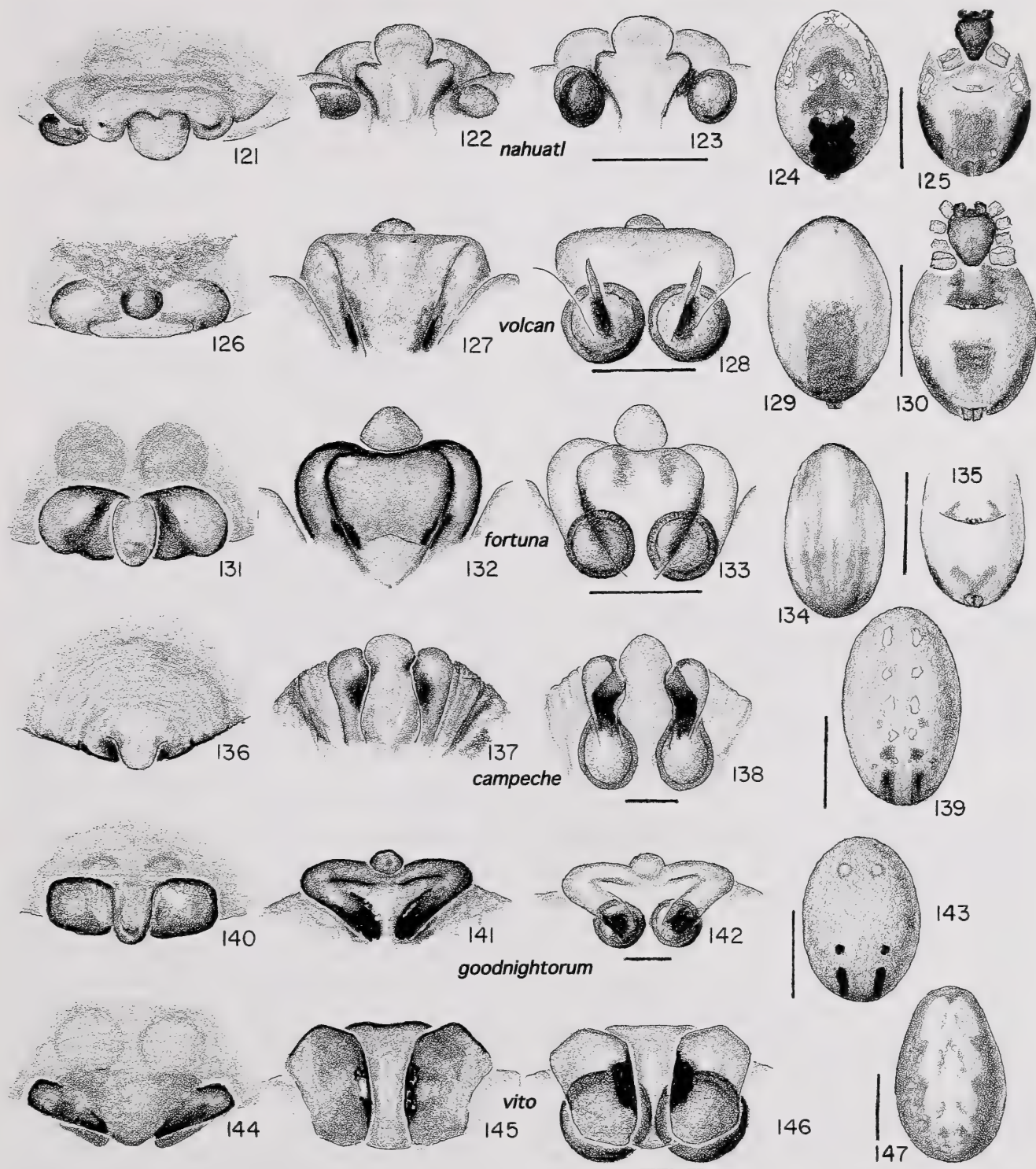
***Mangora campeche* new species**
Figures 136–139; Map 2E

Holotype. Female holotype from Reserva de la Biosfera, Calakmul, km 32, Campeche, Mexico, 20 July 1998 (F. Alvarez) in MCZ. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace, sternum, legs, golden yellow, except for black eye rings and a gray ring at distal ends of tibiae and tarsi. Abdomen yellowish white, with a posterior pair of longitudinal black bands, a pair of black spots, and pairs of white patches (Fig. 139). Venter without marks but sides of spinnerets blackish. Posterior eye row recurved. Ocular trapezoid longer than wide, widest an-

Figures 121–125. *Mangora nahuatl* new species, female. 121–123, epigynum. 121, ventral. 122, posterior. 123, posterior, cleared. 124, abdomen, dorsal. 125, abdomen, ventral.

Figures 126–130. *Mangora volcan* new species, female. 126–128, epigynum. 126, ventral. 127, posterior. 128, posterior, cleared. 129, abdomen, dorsal. 130, abdomen, ventral.



Figures 131–135. *Mangora fortuna* new species, female. 131–133, epigynum. 131, ventral. 132, posterior. 133, posterior, cleared. 134, abdomen, dorsal. 135, abdomen, ventral.

Figures 136–139. *Mangora campeche* new species, female. 136–138, epigynum. 136, ventral. 137, posterior. 138, posterior, cleared. 139, abdomen, dorsal.

Figures 140–143. *Mangora goodnightorum* new species, female. 140–142, epigynum. 140, ventral. 141, posterior. 142, posterior, cleared. 143, abdomen, dorsal.

Figures 144–147. *Mangora vito* new species, female. 144–146, epigynum. 144, ventral. 145, posterior. 146, posterior, cleared. 147, abdomen, dorsal.

Scale lines: 1.0 mm, genitalia 0.1 mm.

teriorly. Posterior median eyes 1.0 diameter of anterior medians; lateral eyes 0.8 diameter. Anterior eyes 1.0 diameter apart, 1.2 from laterals. Posterior median eyes 0.5 diameter apart, 1.5 from laterals. Total length 3.8 mm. Carapace 1.7 mm long, 1.3 wide in thoracic region, 0.7 wide behind lateral eyes, 0.7 high. First femur 1.7 mm, patella and tibia 1.8, metatarsus 1.5, tarsus 0.7. Second patella and tibia 1.7 mm, third 1.2, fourth 1.7.

The male is not known.

Diagnosis. The epigynum of *M. campeche* is lightly sclerotized and distinguished from others, in posterior view, by the narrow, bowling-pin-shaped median plate (Fig. 137).

Distribution. Campeche (Map 2E)

Specimens Examined. No other specimens have been found.

***Mangora goodnightorum* new species**
Figures 140–143; Map 2E

Holotype. Female holotype from Finca Monte Libano [12 mi E El Real], Chiapas, Mexico, "7.5.50" (C., M. Goodnight, J. Stannard), in AMNH.

Description. Female holotype. Prosoma light orange, black between median eyes; distal leg articles gray. Abdomen grayish, light orange with a pair of anterior dorsal white spots and two posterior black bands tipped by a black dot (Fig. 143); venter and spinnerets gray. Posterior eye row straight. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes same diameter as anterior medians; lateral eyes 0.8 diameter. Anterior median eyes 1.0 diameter apart, 1.0 from laterals. Posterior median eyes 0.6 diameter apart, 1.3 from laterals. Total length 2.6 mm. Carapace 1.1 mm long, 0.8 wide in thoracic region, 0.4 wide behind lateral eyes, 0.6 high. First femur 1.3 mm, patella and tibia 1.5, metatarsus 0.9, tarsus 0.6. Second patella and tibia 1.3 mm, third 0.8, fourth 1.3.

The male is not known.

Diagnosis. The epigynum of *M. goodnightorum* is sclerotized and is distin-

guished, in posterior view, from all other Central American *Mangora* by the triangular outline (Fig. 141). Unlike other species, the eye region is slightly projecting above the clypeus.

Distribution. Chiapas (Map 2E).

Specimens Examined. No other specimens have been found.

***Mangora vito* new species**
Figures 144–147; Map 2E

Holotype. Female holotype from San Vito, Las Cruces, 1,300 m, Puntarenas, Costa Rica, Jan. 1987 (W. Eberhard) in MCZ. The specific name is a noun in apposition after the name of the type locality.

Description. Female holotype. Prosoma yellowish. Large black circles around secondary eyes. Legs distally brown. Abdomen white, dorsally with a narrow gray band on each side (Fig. 147), posteriorly wrapping around spinnerets on venter; sides with white pigment spots; venter with gray band anterior of spinnerets. Spinnerets gray. Posterior eye row procurved. Ocular trapezoid longer than wide, widest posteriorly. Posterior median eyes 2.0 diameters of anterior medians; anterior lateral eyes 0.8 diameter, posterior laterals 1.0. Anterior median eyes their diameter apart, 1.0 from laterals. Posterior median eyes 0.5 diameter apart, 0.6 from laterals. Height of clypeus equals 1.5 diameters of anterior median eyes. Total length 3.8 mm. Carapace 1.8 mm long, 1.2 wide in thoracic region, 0.7 wide behind lateral eyes, 0.7 high. First femur 1.5 mm, patella and tibia 1.7, metatarsus 1.3, tarsus 0.6. Second patella and tibia 1.5 mm, third 0.8, fourth 1.6.

The male is not known.

Diagnosis. In ventral view, unlike other species, the epigynum is short, having a median lobe flanked by narrow areas that are lobed laterally, and have a wedge-shaped sclerotization (Fig. 144); in posterior view, the lateral plates overlap the less sclerotized narrow posterior median plate (Fig. 145).

Distribution. Costa Rica (Map 2E).

Specimen Examined. COSTA RICA *San José*: Zurqui, 1600 m, May 1992, 1♀ (W. Eberhard 3632, MCZ) [not mapped].

***Mangora passiva* (O. P.-Cambridge)**
Figures 148–156; Map 2F

Epeira passiva O. P.-Cambridge, 1889: 20, pl. 5, fig. 4, ♀. Female syntypes from Cahabón [Alto Verapaz], San Juan [? Alto Verapaz], Chamelco [? Alto Verapaz], Tactic [Alto Verapaz], Chichochoe [?], Laguna de los Coheteros [?], Cobán [Alto Verapaz], all from Guatemala in BMNH, examined.

Epeira rostrata Keyserling, 1893: 230, pl. 11, fig. 171, ♀. Female holotype from Guatemala, in BMNH, examined. Placed by Levi, 1991, in *Mangora*. NEW SYNONYMY.

Mangora passiva:—F. O. P.-Cambridge, 1904: 480, pl. 45, fig. 19, ♀; Levi, 1975: 124, figs. 69–79, ♀♂. Platnick, 2004.

Note. The holotype of *Epeira rostrata* is labeled *Epeira rostralipes* and is shriveled and faded.

Description. Female from Arizona. Carapace, legs yellow-white. Abdomen with a median black band containing large comma-shaped marks formed by white pigment spots and smaller marks (Fig. 152), venter whitish with median white spots behind epigynum, and a pair of white marks anterior of spinnerets (Fig. 153). Posterior eye row recurved. Ocular trapezoid longer than wide, widest anteriorly. Eyes subequal. Anterior median eyes 1.0 diameter apart, 1.5 from laterals. Posterior median eyes 0.9 diameter apart, 2.0 from laterals. Total length 4.7 mm. Carapace 2.0 mm long, 1.7 wide in thoracic region, 0.7 wide behind posterior eye row, 0.8 high. First femur 2.3 mm, patella and tibia 2.5, metatarsus 1.9, tarsus 0.8. Second patella and tibia 2.4 mm, third 1.4, fourth 2.3.

Male from Arizona lighter than female. Eyes subequal. Anterior median eyes 1.0 diameter apart, 1.5 from laterals. Posterior median eyes their diameter apart, 1.5 from laterals. Height of clypeus 0.6 diameter of anterior median eye. Total length 2.7 mm. Carapace 1.3 mm long, 1.2 wide in thoracic region, 0.5 wide behind posterior eyes, 0.7 high. First femur 1.7 mm, patella and tibia 1.9, metatarsus 1.6, tarsus 0.7.

Second patella and tibia 1.8 mm, third 0.9, fourth 1.5.

Variation. Total length of females 3.7–4.7 mm.

Diagnosis. The abdomen of *M. passiva* is recognized by the two upside-down, comma-shaped light marks on dark background (Fig. 152). The epigynum is usually lightly sclerotized (Figs. 148, 149); when more heavily sclerotized, it loses wrinkles (Figs. 150, 151). It differs from other lightly sclerotized epigyna by the presence of the short scape and the vase-shaped posterior median plate. *Mangora passiva* differs from *M. nahuatl* (Figs. 121–125) by the distinct coloration of the abdomen (Figs. 152, 153) and by being larger in size.

The palpus of the male has a dagger-shaped rod, visible in apical view (Fig. 154), that is heavier than that of *M. sufflava* (Fig. 171).

Natural History. Specimens have been found in short tropical rain forest at Chacanna Ruins.

Distribution. Arizona, New Mexico to Nicaragua (Map 2F; the map includes data from Levi, 1975, map 4).

Specimens Examined. ARIZONA *Cochise Co.*: Rucker Canyon, Chiricahua Mts., 11 July 1973, 1♀ (V. Roth, E. Wilkins, CAS); above Herb Martyr Dam, 11 Aug. 1971, 1♀ (V. Roth, CAS). *Manzanita Co.*: Oak Creek Canyon, 27 July 1950, 3♀, 1♂ (M. A. Cazier, MCZ). MEXICO *Tamaulipas*: 4.5 km NW Gomez Farias, 750 m, 28 Dec. 1971, 2♀ (C. J. Durden, USNM). *Nuevo León*: Santa Rosa Canyon, 29 km W Linares, nr. 24°8'N, 99°8'W, 30 June 1983, 1♀ (W. Maddison, MCZ). *San Luis Potosí*: El Pujal, 18–21 July 1939, 1♀ (R. Haag, MCZ). *Jalisco*: Río Ruidoso [Río Ruidosa], 2♀ (N. Banks, MCZ). *Veracruz*: 22.5 km S Catemaco on Rt. 180, 23 June 1982, 1♀ (F. Coyle, MCZ); Jalapa, July 1981, 5♀ (C. Gold, CAS); 4.8 km NE Huatusco, 22 July 1985, 2♀ (J. Woolley et al., AD). *Hidalgo*: Jacala, 1,370 m, 30 June–3 July 1939, 1♀ (B. Wathall, AMNH). *Puebla*: Huauchinango, 9 Oct. 1947, many ♀♂ (H. Wagner, AMNH). *Oaxaca*: Llanos de la Flores, 24 km NE Ixtlan de Juárez, 21 July 1985, 1♂ (J. Woolley, et al., AD); base San Filipe Mt., 16, 17 Sep. 1947, 1♂ (B. Malkin, AMNH); Oaxaca, 19 July 1947, 1♀ (B. Malkin, AMNH); San Juan Quiotepec, July 1962, 1♀ (W. S. Miller, AMNH). *Campeche*: Chicanna Ruins, 8 km W Xpujil, 18°32'N, 89°31'W, 12–14 July 1983, 1♀ (W. Maddison, MCZ). *Chiapas*: (Van Patten, MCZ); San

Cristobal de Las Casas, 22 July 1947, 1♂ (C., M. Goodnight, AMNH). GUATEMALA Capetillo, 20–23 Aug. 1947, 1♀ (C., P. Vaurie, AMNH). NICARAGUA *Jinotega*: Jinotega, 15 Aug. 1989, 1♂ (F. Reinboldt, JM); 5 km Jinotega, Los Pinares, 29 May 1992, 1♀ (J. Maes, C. Pineda, JM); Matagalpa, 4 Oct. 1952, 2♀ (R. B. Swain, AMNH); 1 Nov. 1991, 1♀ (J. Maes, JM).

***Mangora ixtapan* new species**
Figures 157–163; Map 2G

Holotype. Female holotype, male paratype, and two female paratypes from 6.5 km W Uruapán, 2,300 m, Michoacan, Mexico, 15 Aug. 1967 (R. E. Leech) in MCZ. The name is a noun in apposition after the locality of a paratype.

Description. Female holotype. Prosoma light orange, except black circles around secondary eyes; distal articles of legs gray. Abdomen orange-white, with spinnerets dark gray (Fig. 160). Posterior eye row straight. Ocular trapezoid longer than wide, rectangular. Posterior median eyes 1.0 diameter of anterior medians; lateral eyes 0.8 diameter. Anterior median eyes 1.0 diameter apart, 1.0 from laterals. Posterior median eyes 0.9 diameter apart, 1.2 from laterals. Height of clypeus equals 0.8 diameter of anterior median eyes. Total length 3.1 mm. Carapace 1.2 mm long, 1.1 wide in thoracic region, 0.6 wide behind lateral eyes, 0.6 high. First femur 1.4 mm, patella and tibia 1.5, metatarsus 1.3, tarsus 0.6. Second patella and tibia 1.4 mm, third 0.8, fourth 1.4.

Male paratype. Prosoma yellow, abdomen lighter yellowish without marks. Posterior eye row recurved. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 1.2 diameters of anterior medians; lateral eyes 0.8 diameters. Anterior median eyes 0.8 diameter apart, 1.0 from laterals. Posterior median eyes 0.3 diameter apart, 1.0 from laterals. Total length 2.3 mm. Carapace 1.2 mm long, 0.9 wide in thoracic region, 0.4 wide behind lateral eyes, 0.4 high. First femur 1.2 mm, patella and tibia 1.3, metatarsus 0.9, tarsus 0.5. Second patella and tibia 1.2 mm, third 0.7, fourth 1.1.

Variation. Total length of females 2.7–

3.1 mm. The illustrations were made from female holotype and male paratype.

Diagnosis. The epigynum of *M. ixtapan* is lightly sclerotized and distinguished from others by the semicircular scape (Fig. 157) and a posterior median plate widening toward the scape (Fig. 158).

The palpus of the male, in apical view, differs from that of *M. passiva* and *M. candida* by having the dagger-shaped rod with a right-angle bend (Figs. 161, 163).

Distribution. Michoacan, México, Mexico (Map 2G).

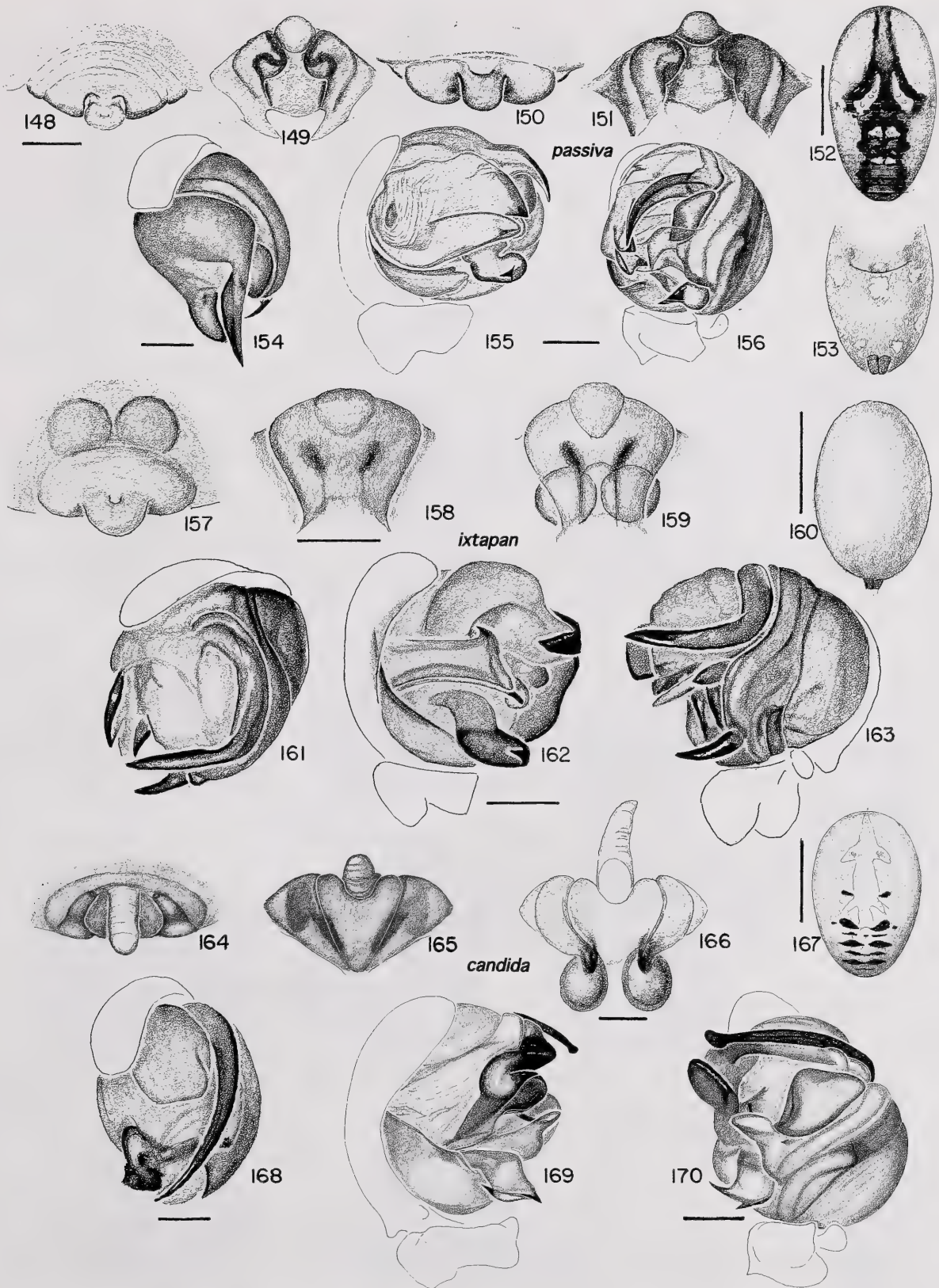
Paratype. MEXICO México: Ixtapan de la Sal, 21–28 Aug. 1946, 1♀ (H. Wagner, AMNH).

***Mangora candida* Chickering**
Figures 164–170; Map 2G

Mangora candida Chickering, 1954: 198, figs. 6–9, ♀♂. Male holotype from Barro Colorado Island, Gatun Lake, Panama, in MCZ, examined. Platnick, 2004.

Description. Female from Madden Dam, Panama. Prosoma yellow-white. Abdomen whitish with white pigment spots, and several pairs of black lines posteriorly (Fig. 167). Posterior eye row slightly recurved. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 0.9 diameter of anterior medians; lateral eyes 0.8 diameter. Anterior median eyes 1.0 diameter apart, 0.8 from laterals. Posterior median eyes almost touching, 1.3 diameters from laterals. Height of clypeus equals 0.8 diameter of anterior median eyes. Total length 3.8 mm. Carapace 1.7 mm long, 1.3 wide in thoracic region, 0.6 wide behind lateral eyes, 0.8 high. First femur 1.8 mm, patella and tibia 2.3, metatarsus 1.8, tarsus 0.8. Second patella and tibia 1.8 mm, third 1.2, fourth 2.0.

Male from Madden Dam. Coloration as in female (Fig. 167). Posterior eye row slightly recurved. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 0.8 diameter of anterior medians; lateral eyes 0.5 diameter. Anterior median eyes 0.6 diameter apart, 0.5 from laterals. Posterior median eyes almost touching, 1.0 diameter from laterals. Total



Figures 148–156. *Mangora passiva* (O. P.-Cambridge). 148–153, female. 148–151, epigynum. 148, 150, ventral. 149, 151, posterior. 152, abdomen, dorsal. 153, abdomen, ventral. 154–156, male, left palpus. 154, apical. 155, mesal. 156, ventral.

Figures 157–163. *Mangora ixtapan* new species. 157–160, female. 157–159, epigynum. 157, ventral. 158, posterior. 159, posterior, cleared. 160, abdomen, dorsal. 161–163, male, palpus. 161, apical. 162, mesal. 163, ventral.

Figures 164–170. *Mangora candida* Chickering. 164–167, female. 164–166, epigynum. 164, ventral. 165, posterior. 166, posterior, cleared. 167, abdomen, dorsal. 168–170, male, palpus. 168, apical. 169, mesal. 170, ventral.

Scale lines: 1.0 mm, genitalia 0.1 mm.

length 2.7 mm. Carapace 1.3 mm long, 0.9 wide in thoracic region, 0.4 wide behind lateral eyes, 0.7 high. First femur 1.5 mm, patella and tibia 1.8, metatarsus 1.5, tarsus 0.6. Second patella and tibia 1.4 mm, third 0.8, fourth 1.5.

Variation. Total length of females 3.3–3.8 mm, males 2.2–2.7 mm. The illustrations were made from the holotype and male allotype.

Diagnosis. The epigynum of *M. candida* is lightly sclerotized and distinguished from others by having the long scape flanked by large depressions (Fig. 164), and a triangular, pointed, median posterior plate (Fig. 165). The pattern of the abdomen, with several pairs of black streaks (Fig. 167), is distinctive.

Unlike that of the males of *M. passiva* and *M. sufflava*, the palpus of the male in apical view has a gently curved dagger-shaped rod (Fig. 168) with a distal flattened tip (Fig. 169).

Natural History. Specimens have been collected in forest in Panama.

Distribution. This species is known only from along the Panama Canal area (Map 2G).

Paratypes. PANAMA Panamá: Barro Colorado Island, 2 Aug. 1954, 1♂ (A. M. Chickering, MCZ); 1975, 1♂ (W. Eberhard, MCZ); Madden Dam, Aug. 1939, 1♀, 2♂ (A. M. Chickering, MCZ); Forest Reserve, numerous collections (A. M. Chickering, MCZ).

Mangora sufflava Chickering Figures 171–174; Map 2G

Mangora sufflava Chickering, 1963: 9, figs. 12–15, ♂. Male holotype from Boquete, Chiriquí, Panama, in MCZ, examined. Platnick, 2004.

Note. Chickering did not mention the similarity of this species to *M. passiva* or how they can be separated.

Description. Male holotype. Carapace

with a median dusky line, median eye region and clypeus gray. Legs yellowish. Sternum yellowish, gray toward borders. Abdomen yellowish white, dorsally with posterior pair of black rectangles (Fig. 174). Posterior eye row recurved. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 1.0 diameter of anterior medians; lateral eyes 0.8 diameter. Anterior median eyes 0.8 diameter apart, 0.5 from laterals. Posterior median eyes 0.3 diameter apart, 1.0 from laterals. Height of clypeus equal to 0.8 diameter of anterior median eye. Total length 2.6 mm. Carapace 1.3 mm long, 1.1 wide in thoracic region, 0.5 wide behind lateral eyes, 0.7 high. First femur 1.5 mm, patella and tibia 1.6, metatarsus 1.2, tarsus 0.7. Second patella and tibia 1.4 mm, third 0.8. Fourth femur 1.3 mm, patella and tibia 1.2, metatarsus 0.9, tarsus 0.5.

The female is not known.

Diagnosis. The apical view of the palpus differs from that of *M. passiva* (Fig. 154) by having a more gracefully shaped curved rod (Fig. 171), and in mesal view, a heavily sclerotized median apophysis spine (4 h in Fig. 172).

Distribution. Chiriquí, Panama (Map 2G).

Specimens Examined. No other specimens have been found.

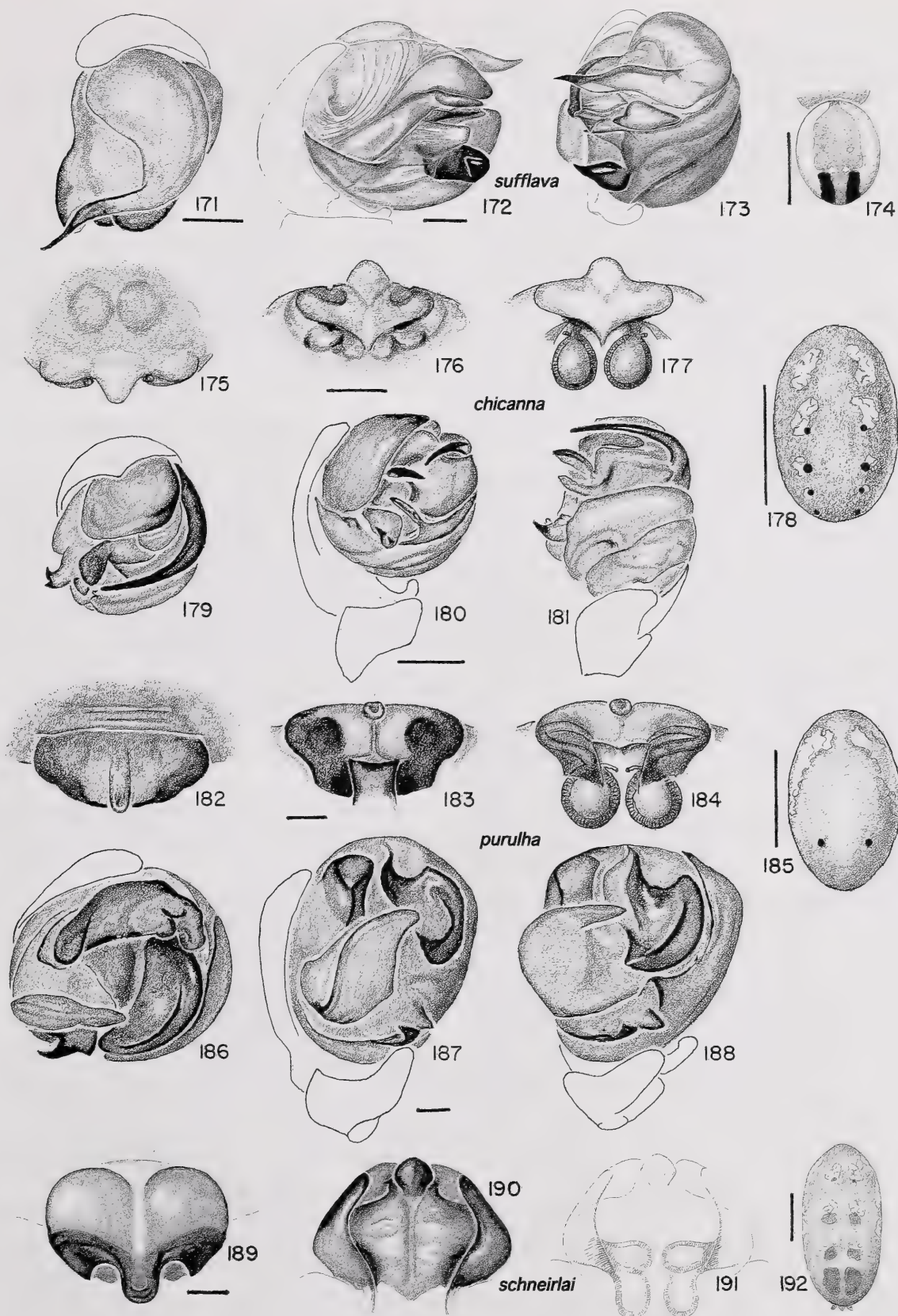
Mangora chicanna new species Figures 175–181; Map 2H

Holotype. Female holotype from Chicanna Ruins, ca. 8 km W of Xpujil, ca. 18°32'N, 89°31'W, Campeche, Mexico, 12–14 July 1983 (W. Maddison) in MCZ. The species is named after the type locality as a noun in apposition.

Description. Female paratype from Honduras. Carapace golden yellow, with small black eye rings. Sternum, legs yellow.

Figures 171–174. *Mangora sufflava* Chickering, male. 171–173, left palpus. 171, apical. 172, mesal. 173, ventral. 174, abdomen, dorsal.

Figures 175–181. *Mangora chicanna* new species. 175–177, female. 175–177, epigynum. 175, ventral. 176, posterior. 177, posterior cleared. 178, abdomen, dorsal. 179–181, male, palpus. 179, apical. 180, mesal. 181, ventral.



Figures 182–188. *Mangora purulha* new species. 182–185, female. 182–184, epigynum. 182, ventral. 183, posterior. 184, posterior, cleared. 185, abdomen, dorsal. 186–188, male, palpus. 186, apical. 187, mesal. 188, ventral.

Figures 189–192. *Mangora schneirlai* Chickering, female. 189–191, epigynum. 189, ventral. 190, posterior. 191, posterior, cleared. 192, abdomen, dorsal.

Scale lines: 1.0 mm, genitalia 0.1 mm.

Abdomen whitish, with pairs of white pigment patches and four pairs of round, black spots (Fig. 178); venter without marks. Posterior eye row procurved. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 0.8 diameter of anterior medians; lateral eyes 0.7 diameter. Anterior median eyes 0.5 diameter apart, 0.5 from laterals. Posterior median eyes 0.3 diameter apart, 1.2 from laterals. Total length 2.4 mm. Carapace 1.2 mm long, 0.8 wide in thoracic region, 0.3 wide behind lateral eyes, 0.5 high. First femur 1.4 mm, patella and tibia 1.6, metatarsus 1.3, tarsus 1.1. Second patella and tibia 1.4 mm, third 0.7, fourth 1.3 mm.

Male paratype from Campeche. All light yellowish, abdomen lighter with four pairs of black spots on abdomen, but no white pigment. Posterior eye row slightly procurved. Eye trapezoid widest in front, as long as wide in front. Posterior median eyes 0.7 diameter of anterior medians; lateral eyes 0.5 diameter. Anterior median eyes 0.7 diameter apart, 0.4 from laterals. Posterior median eyes 0.4 diameter apart, 1.0 from laterals. Total length 2.2 mm. Carapace 1.1 mm long, 0.7 wide in thoracic region, 0.3 wide behind lateral eyes, 0.5 high. First femur 1.3 mm, patella and tibia 1.6, metatarsus 1.2, tarsus 0.5. Second patella and tibia 1.3 mm, third 0.7, fourth 1.2 mm.

Variation. Total length of females 2.2–3.0 mm, males 1.8–2.2 mm. The illustrations of a female were made from a paratype from Honduras, and male allotype from Campeche, Mexico.

Diagnosis. The four pairs of circular, black dots on the abdomen (Fig. 178) easily characterize *M. chicanna*. The epigynum is lightly sclerotized and distinguished from others by the short, wide posterior median plate (Fig. 176).

The palpus of the male, in apical view, differs by having a strongly curved rod (Fig. 179) and the median apophysis has two spines (Figs. 179, 180).

Natural History. Specimens came from dry, deciduous forest in Campeche.

Distribution. Yucatan Peninsula, Chiapas to Honduras (Map 2H).

Paratypes. MEXICO *Campeche:* Reserva de la Biosfera, Calakmul, km 32, 20 July 1998, 1♀, 1♂ (F. Alvarez, MCZ); 26 July 1998, 2♀, 1♂ (F. Alvarez, MCZ). *Yucatan:* Colonia Yucatán, 22 Aug. 1964, 1♀ (J. C. Pallister, AMNH); Progreso, 25 July 1952, 1♀ (J., D. Pallister, AMNH). *Quintana Roo:* Chancanah, Cozumel, 8 Aug. 1949, 1♀ (C. Goodnight, AMNH); San Felipe de Bacalor, 8 July 1993, 1♀ (G. Alayón, ECOSUR); Rancho Las Palmas, 30 km S Felipe Carrillo Puerto, 10 June 1993, 1♂ (G. Alayón, ECOSUR). *Chiapas:* El Real, 6 July 1950, 1♀ (C., M. Goodnight, AMNH). HONDURAS Bouacca Island [?], 1–15 Apr. 1935, 1♀ (M. Bates, MCZ).

Mangora purulha new species
Figures 182–188; Map 2H

Holotype. Female holotype with male paratype from Purulhá, Baja Verapaz, Guatemala, 2,300 m, 23 May 1979 (J. Coddington) in MCZ. The name is a noun in apposition after the type locality.

Description. Female holotype. Prosoma pale orange. Abdomen light orange-white, with a pair of posterior spots and white pigment anterior on sides (Fig. 185); venter orange-white, sides of spinnerets gray. Posterior eye row straight. Ocular trapezoid longer than wide, rectangular. Posterior median eyes 1.2 diameters of anterior medians; lateral eyes 1.0 diameter. Anterior median eyes 1.0 diameter apart, 1.0 diameter from laterals. Posterior median eyes 0.6 diameter apart, 1.1 from laterals. Height of clypeus equals 0.5 diameter of anterior median eyes. Total length 3.2 mm. Carapace 1.4 mm long, 1.2 wide in thoracic region, 0.6 wide behind lateral eyes, 0.7 high. First femur 1.5 mm, patella and tibia 1.8, metatarsus 1.5, tarsus 0.7. Second patella and tibia 1.7 mm, third 1.0. Fourth femur 1.6 mm, patella and tibia 1.6, metatarsus 1.3, tarsus 0.6.

Male paratype. Similar color as female, but white on sides of abdomen more extensive than in female. Posterior eye row straight. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 0.8 diameter of anterior medians; lateral eyes 0.7 diameter. Anterior median eyes 1.2 diameters apart, 1.0 from laterals. Posterior median eyes 1.0 diameter apart,

1.8 from laterals. Total length 2.7 mm. Carapace 1.6 mm long, 1.3 wide in thoracic region, 0.5 wide behind lateral eyes, 0.7 high. First femur 1.6 mm, patella and tibia 1.8, metatarsus 1.6, tarsus 0.7. Second patella and tibia 1.7 mm, third 1.0, fourth 1.7.

Diagnosis. *Mangora purulha* is distinguished by two circular, black dots on the abdomen (Fig. 185). The epigynum differs by a lightly sclerotized, slender scape on a curved, transverse plate (Fig. 182), and in posterior view, by lateral sclerotization (Fig. 183).

Males also have two black spots on the abdomen and the palpus has a median apophysis with one curved spine visible in apical view (Fig. 186), a soft, large embolus (Figs. 187, 188), and a sclerotized terminal apophysis (Fig. 186). Because only one male was available, the sclerites were not carefully examined nor was their homology checked.

Distribution. Guatemala (Map 2H).

Specimens Examined. No other specimens have been found.

Mangora schneirlai Chickering Figures 189–192; Map 2H

Mangora schneirlai Chickering, 1954: 209, fig. 22, ♀. Female holotype from Barro Colorado Island, Gatun Lake, Panama, in AMNH, examined. Platnick, 2004.

Description. Female paratype. Prosoma yellowish. Abdomen yellowish, with four white spots and a pair of black rectangles posteriorly (Fig. 192); venter with a pair of white spots lateral to genital furrow and lateral to spinnerets. Posterior eye row recurved. Ocular trapezoid slightly longer than wide, widest anteriorly. Posterior median eyes 1.0 diameter of anterior medians; lateral eyes 0.6 diameter. Anterior median eyes 0.8 diameter apart, 0.8 from laterals. Posterior median eyes 0.4 diameter apart, 1.0 from laterals. Legs heavy. Total length 4.8 mm. Carapace 1.7 mm long, 1.0 wide in thoracic region, 0.6 wide behind lateral eyes, 0.7 high. First femur 1.8 mm, patella and tibia 2.0, metatarsus 1.5, tarsus

0.7. Second patella and tibia 1.8 mm, third 1.3. Fourth femur 1.7 mm, patella and tibia 2.0, metatarsus 1.6, tarsus 0.7.

The male is not known.

Variation. Total length of females 3.5–4.8 mm. The illustrations were made from the female holotype.

Diagnosis. *Mangora schneirlai* belongs to the group of species with two black rectangles on the posterior of the abdomen (Fig. 192). The epigynum differs from that of other species with this pattern by having a median scape flanked by a semicircular notch on each side (Fig. 189). The posterior view of the epigynum of *M. schneirlai* (Fig. 190) differs from others, except *M. corcovado*, by having the wide, median plate covered by the narrow lateral ones on each side (Fig. 190).

Distribution. Costa Rica, Panama (Map 2H).

Paratype. PANAMA Panamá, Apr., May 1946, 1 ♀ (T. C. Schneirla, MCZ).

Specimens Examined. COSTA RICA *Puntarenas*: Corcovado Natl. Park, 11 Aug. 1979, 1 ♀ (J. Codrington, MCZ). PANAMA *Panamá*: Barro Colorado Isl., Gatun Lake, 30 July, 1964, 1 ♀ (D. M. Rees, AMNH); nr. Gamboa, Sep. 1975, 2 ♀ (W. Eberhard, MCZ).

Mangora bimaculata (O. P.-Cambridge) Figures 193–199; Map 2I

Epeira bimaculata O. P.-Cambridge, 1889: 21, pl. 6, figs. 12, 13, ♀♂. Specimens from between Petet [Petén, El Petén] and Chicoyoito [?], Guatemala, Cahabón [Alto Verapaz], Quiriguá [Izabal], and Veragua, Panama, in BMNH, examined. Keyserling, 1893: 260, pl. 13, fig. 19, ♀♂.

Mangora bimaculata:—F. O. P.-Cambridge, 1904: 479, pl. 45, figs. 10, 11, ♀♂. Chickering, 1954: 197, figs. 1–5, ♀♂. Platnick, 2004.

Description. Female from Petén, Guatemala. Prosoma yellowish. Abdomen whitish with white pigment spots and a pair of dorsal posterior black rectangles (Fig. 196); venter with white pigment spots except in midline. Posterior eye row recurved. Ocular trapezoid as long as wide in front, widest anteriorly. Posterior median eyes 1.0 diameter of anterior medians; lateral eyes 0.7 diameter. Anterior me-

dian eyes 0.4 diameter apart, 1.2 from laterals. Posterior median eyes 0.2 diameter apart, 1.5 from laterals. Total length 6.3 mm. Carapace 2.2 mm long, 1.8 wide in thoracic region, 0.8 wide behind lateral eyes, 1.2 high. First femur 2.7 mm, patella and tibia 3.0, metatarsus 2.6, tarsus 1.1. Second patella and tibia 2.7 mm, third 1.7, fourth 2.9.

Male from Hidalgo, Mexico. Prosoma light orange. Abdomen as in female. Posterior eye row procurved. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 0.9 diameter of anterior medians; lateral eyes 0.8 diameter. Anterior median eyes 1.0 diameter apart, 0.3 from laterals. Posterior median eyes almost touching, 0.8 from laterals. Total length 2.3 mm. Carapace 1.2 mm long, 0.9 wide in thoracic region, 0.4 wide behind lateral eyes, 0.7 high. First femur 1.3 mm, patella and tibia 1.5, metatarsus 1.2, tarsus 0.7. Second patella and tibia 1.3 mm, third 0.7, fourth 1.2.

Variation. Total length of females 5.3–6.3 mm. A female from Chiapas has indistinct black bands rather than patches on the abdomen. The illustrations were made from female and male syntypes; Figure 197 was from a Hidalgo male.

Diagnosis. *Mangora bimaculata* differs from sympatric species in the north by the coloration of the abdomen and from those with similar abdomen patches by the epigynum, which is heavily sclerotized and has an oval posterior opening with an anterior median tubercle (Fig. 193); in posterior view the median plate forms a groove (Fig. 194).

The palpus of the male differs from that of *M. sufflava* by the different shape of the terminal apophysis, having a shorter, distal dagger-shaped rod (Fig. 197).

Natural History. Specimens from Barrancas came from a palm forest; the Chiapas specimens were collected by sweeping.

Distribution. Central Mexico to Costa Rica (Map 2I).

Specimens Examined. MEXICO *Hidalgo*: 3.2 km SW Jacala, 18 Aug. 1964, 1♂ (J. W. Ivie, AMNH). *Chiapas*: Palenque Ruins, 9 July 1949, 1♀ (C. J. Goodnight, AMNH). GUATEMALA *Petén*: Uaxactún, Mar.–Apr. 1931, 1♀ (H. H. Bartlett, MCZ). COSTA RICA *San José*: San Isidro del General, 600–1,200 m, 1♀ (D. Rounds, MCZ). *Puntarenas*: Barrancas, 13 June 1979, 1♀ (J. Coddington, MCZ).

Mangora pia Chamberlin and Ivie Figures 200–207; Map 2J

Mangora pia Chamberlin and Ivie, 1936: 58, pl. 12, fig. 112, ♀. Female holotype from Barro Colorado Island, Panama, in AMNH, examined. Chickering, 1954: 208, figs. 18–21, ♀♂. Platnick, 2004.

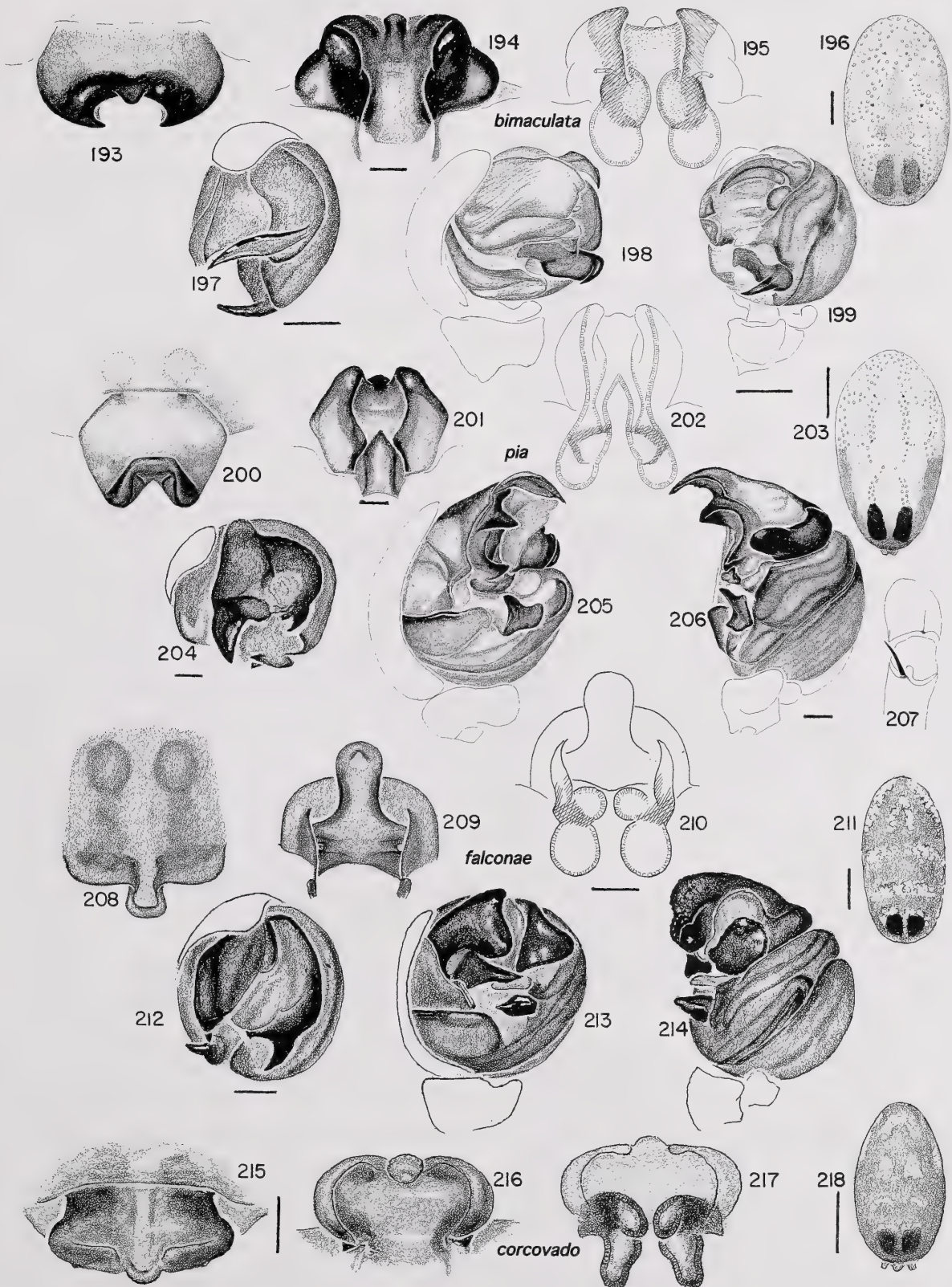
M. belligerens Chamberlin and Ivie, 1936: 60, pl. 12, fig. 113, ♂. Male holotype from Barro Colorado Island, Panama, in AMNH, examined. First synonymized with *pia* by Chickering, 1954.

M. wiedenmeyeri Schenkel, 1953: 18, fig. 15, ♀. Female holotype from El Pozón, Depto. Acosta, Falcón, Venezuela, in NMB, examined. Platnick, 2004. NEW SYNONYMY.

Description. Female from Barro Colorado Island. Prosoma light orange. Abdomen whitish, with a pair of posterior black rectangles and indistinct longitudinal lines with white pigment spots (Fig. 203); venter whitish with a pair of white spots, one on each side anterior to spinnerets, and two indistinct longitudinal lines of white pigment spots. Posterior eye row straight. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 0.8 diameter of anterior medians; lateral eyes 0.6 diameter. Anterior median eyes 0.7 diameter apart, 1.0 from laterals. Posterior median eyes 0.4 diameter apart, 1.4 from laterals. Total length 5.5 mm. Carapace 2.4 mm long, 2.0 wide in thoracic region, 0.8

Figures 193–199. *Mangora bimaculata* (O. P.-Cambridge). 193–196, female. 193–195, epigynum. 193, ventral. 194, posterior. 195, posterior, cleared. 196, abdomen, dorsal. 197–199, male, left palpus. 197, apical. 198, mesal. 199, ventral.

Figures 200–207. *Mangora pia* Chamberlin and Ivie. 200–203, female. 200–202, epigynum. 200, ventral. 201, posterior. 202, posterior, cleared. 203, abdomen, dorsal. 204–207, male. 204–206, palpus. 204, apical. 205, mesal. 206, ventral. 207, proximal end of fourth leg, ventral.



Figures 208–214. *Mangora falconae* Schenkel. 208–211, female. 208–210, epigynum. 208, ventral. 209, posterior. 210, posterior, cleared. 211, abdomen, dorsal. 212–214, male, palpus. 212, apical. 213, mesal. 214, ventral.

Figures 215–218. *Mangora corcovado* new species, female. 215–217, epigynum. 215, ventral. 216, posterior. 217, posterior, cleared. 218, abdomen, dorsal.

Scale lines: 1.0 mm, genitalia 0.1 mm.

wide behind lateral eyes, 1.4 high. First femur 3.0 mm, patella and tibia 3.2, metatarsus 3.0, tarsus 1.1. Second patella and tibia 3.1 mm, third 2.1. Fourth femur 3.2 mm, patella and tibia 3.3, metatarsus 2.8, tarsus 1.1.

Male from Barro Colorado Island, Panama. Coloration as in female. Posterior eye row straight. Eye trapezoid longer than wide, widest anteriorly. Posterior median eyes 0.8 diameter of anterior medians; anterior lateral eyes 0.7 diameter, posterior 0.6. Anterior median eyes 0.8 diameter apart, 0.8 from laterals. Posterior median eyes 0.2 diameter apart, 1.2 from laterals. Fourth femur with a proximal, ventral macroseta (Fig. 207). Total length 3.8 mm. Carapace 2.0 mm long, 1.8 wide in thoracic region, 0.7 wide behind lateral eyes, 1.0 high. First femur 2.3 mm, patella and tibia 2.6, metatarsus 2.3, tarsus 0.9. Second patella and tibia 2.2 mm, third 1.5, fourth 2.4.

Variation. Total length of females 5.0–6.7 mm, males 3.3–4.3 mm. The illustrations were made from the female holotype of *M. pia*: Figures 205 and 206 were from the holotype of *M. belligerens*; and Figure 204 was from a specimen from Barro Colorado Island, Panama.

Diagnosis. *Mangora pia* differs from females of other species with a pair of black rectangles on the abdomen by the distinctive heavily sclerotized epigynum, which has a median, triangular notch, framed by a sclerotized fold (Fig. 200).

Males differ from males of *M. melanocephala* and *M. falconae* (which also have a macroseta on the venter of the proximal end of the fourth femur; Fig. 207), by being much larger in size than *M. melanocephala* and lacking the filamentous embolus in the palpus (Figs. 205–206), and from *M. falconae*, in apical view, by the thick spine of the terminal apophysis (Fig. 204).

Natural History. Living specimens are green (Craig, personal communication). Specimens have been found in forest in Panama. *Mangora pia* “is a wet season,

forest understory spider and the ones I worked on lived in vegetation near streams but not on the stream edge. They build very delicate and beautiful webs, densely spun, and the viscid silk is extremely stretchy and densely coated with glue” (Craig, personal communication). Lubin (1978) writes that the species is primarily diurnal but complete webs can be found at night.

Distribution. Panama, northern Venezuela and eastern Colombia (Map 2J).

Specimens Examined. PANAMA Taboga Isl., 23 Aug. 1946, 1 ♀ (N. L. H. Krauss, AMNH). *Panamá:* Araján, Cerro Galero, very common (W. Eberhard, MCZ); Barro Colorado Island, Gatun Lake, very common (AMNH, MCZ, USNM); Cocoli area, July–Sep. 1954, 2 ♀ (W. E. Lundy, AMNH); France Field, Aug. 1939, 1 ♂ (A. M. Chickering, MCZ); Pedro Miguel, July 1950, 1 ♀ (A. M. Chickering, MCZ); Experimental Gardens, 11–13 July 1954, 1 ♀, 2 ♂ (A. M. Chickering, MCZ); Forest Reserve, Aug. 1939, 2 ♂; July 1950, 1 ♂ (A. M. Chickering, MCZ); Parque Nac. Soberiana, 7 Aug. 1983, 2 ♀ (R. J. Raven, AMNH); Pipe line Road nr. Gamboa, 6 Jan. 1977, 1 ♀ (H. Levi, M. Robinson, MCZ); Chilibre, July 1950, 1 ♂ (A. M. Chickering, MCZ); Madden Dam, Aug. 1939, 1 ♀ (A. M. Chickering, MCZ); Fort Knobbe, 3 Aug. 1983, 1 ♀ (H., L. Levi et al., MCZ); Summit, Nov. 1946, 1 ♀ (N. L. H. Krauss, AMNH); Summit Gardens, July 1954, 1 ♀ (A. M. Chickering, MCZ); El Valle, 3 ♀ (A. M. Chickering, MCZ); Villa Darién, 12–28 Feb. 1984, 2 ♀ (M. N. García, MIUP). COLOMBIA *Valle:* nr. Cali, 1,000 m, 3 ♀ (W. Eberhard 1128, 1131, 1132, MCZ); Río Jamundi nr. Jamundi, 9 Dec. 1969, 1 ♀ (W. Eberhard, MCZ).

Mangora falconae Schenkel Figures 208–214; Map 2K

Mangora falconae Schenkel, 1953: 19, fig. 17, ♀. Female holotype from El Pozón, Depto. Acosta, Falcón, Venezuela, in NMB, examined. Platnick, 2004.

Description. Female from Magdalena, Colombia. Prosoma light orange. Abdomen orange-white, with two posterior black rectangles and streaks of white pigment spots (Fig. 211); venter orange-white. Posterior eye row straight. Ocular trapezoid longer than wide, slightly widest anteriorly. Posterior median eyes 0.8 diameter of anterior medians; lateral eyes 0.7 diameter. Anterior median eyes 0.5 diameter apart, 0.8 from laterals. Posterior

median eyes 0.3 diameter apart, 1.2 from laterals. Total length 4.3 mm. Carapace 1.8 mm long, 1.5 wide in thoracic region, 0.7 wide behind lateral eyes, 1.3 high. First femur 2.1 mm, patella and tibia 2.1, metatarsus 1.6, tarsus 0.6. Second patella and tibia 1.8 mm, third 1.3. Fourth femur 2.1 mm, patella and tibia 2.2, metatarsus 1.7, tarsus 0.7.

Male from Magdalena, Colombia. Coloration as in female, except venter of abdomen with a large, median patch of white pigment spots. Posterior eye row slightly recurved. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 0.8 diameter of anterior medians; lateral eyes 0.6 diameter. Anterior median eyes 0.4 diameter apart, 0.4 from laterals. Posterior median eyes 0.3 diameter apart, 1.0 from laterals. Height of clypeus equal to 0.8 diameter of anterior median eye. Fourth femur with proximal, ventral macroseta (Fig. 207). Total length 2.8 mm. Carapace 1.8 mm long, 1.2 wide in thoracic region, 0.5 wide behind lateral eyes, 0.7 high. First femur 1.6 mm, patella and tibia 1.7, metatarsus 1.3, tarsus 0.6. Second patella and tibia 1.4 mm, third 0.9, fourth 1.5.

Variation. Total length of females 3.1–4.4 mm, males 2.6–2.8 mm. The illustrations were made from the female holotype, and from a male specimen from Colombia.

Diagnosis. The epigynum of *M. falconae* is distinct from that of all species in having a pair of black rectangles on the abdomen, by the scape having a narrow base (Fig. 208), and in posterior view having the median plates upside-down-T-shaped (Fig. 209).

Males are distinguished from those of *M. melanocephala* and *M. pia*, which also have a macroseta on the fourth femur (Fig. 207), by a palpus with the terminal apophysis having a thorn-shaped hook seen in apical view (Fig. 212).

Natural History. Specimens have been collected on plants in Colombia, and from a coastal thorn-scrub in Venezuela.

Distribution. Panama, northern Venezuela, Colombia (Map 2K).

Specimens Examined. PANAMA Chiriquí: 1938, 1♀ (AMNH).

VENEZUELA Sucre: Carúpano, 23–31 July 1987, 1♂ (S., J. Peck, AMNH). COLOMBIA Magdalena: Tayrone Park, Gairaca, 8 km NE Santa Marta, 13 June 1985, 1♀ (H.-G. Müller, SMF); Tayrone Park, 16 km NE Santa Marta, 16 June 1985, 9♀, 1♂, 2 imm. (H.-G. Müller, SMF).

Mangora corcovado new species Figures 215–218; Map 2K

Holotype. Female holotype from Llocona [?]. Corcovado National Park, Puntarenas, Costa Rica, 11 Aug. 1979 (J. Coddington), in MCZ. The name is a noun in apposition after the name of the type locality.

Description. Female holotype. Prosoma yellowish. Abdomen yellowish white with a pair of black rectangles posteriorly, and areas of white spots anteriorly (Fig. 218); venter without marks. Posterior eye row procurved. Ocular trapezoid longer than wide, widest anteriorly. Posterior median eyes 1.0 diameter of anterior medians; lateral eyes 0.6 diameter. Anterior median eyes 0.3 diameter apart, 0.5 from laterals. Posterior median eyes 0.2 diameter apart, 1.0 from laterals. Total length 3.2 mm. Carapace 1.7 mm long, 1.3 wide in thoracic region, 0.6 wide behind lateral eyes, 1.2 high. First femur 1.6 mm, patella and tibia 2.0, metatarsus 1.4, tarsus 0.7. Second patella and tibia 1.8 mm, third 1.3. Fourth femur 1.8 mm, patella and tibia 1.9, metatarsus 1.5, tarsus 0.7.

The male is not known.

Diagnosis. The scape of the epigynum of *M. corcovado* is a short lobe without constriction (Fig. 215) compared to the longer, constricted scape of *M. falconae* (Fig. 208) and in posterior view the epigynum has a wider median plate (Fig. 216) than in *M. falconae*.

Distribution. Costa Rica (Map 2K).

Specimens Examined. No other specimens have been found.

ACKNOWLEDGMENTS

Without the collections mentioned in the Methods, this revision would not have been possible and I am grateful to the curators and collectors mentioned there for their help. I also thank Robin Leech and J. Beatty each for the gift of a specimen and W. Eberhard, G. Ibarra N., and J. M. Maes for information on obscure localities. W. Piel provided instructions for mapping. Lorna Levi and Laura Leibensperger read the manuscript and helped with wording; C. Dondale made helpful comments. National Science Foundation grant GB-36161 supported the start of the revision in the 1970s, enabling the borrowing and illustrating of old types.

LITERATURE CITED

- BONNET, P. 1957. *Bibliographia Araneorum*, Toulouse, **2**: 1927–3026.
- . 1961. *Bibliographia Araneorum*, Toulouse, **3**: 1–591.
- BRYANT, E. 1945. The Argiopidae of Hispaniola. *Bulletin of the Museum of Comparative Zoology*, **95**: 357–418.
- CAMBRIDGE, F. O. P.-. 1904. Arachnida, Araneidea and Opiliones, pp. 465–545. *In* *Biologia Centrali-Americana*, Zoologia. Vol. 2. London, United Kingdom.
- CAMBRIDGE, O. P.-. 1889. Arachnida, Araneidea and Opiliones, pp. 1–56. *In* *Biologia Centrali-Americana*, Zoologia. Vol. 1. London, United Kingdom.
- CAPORIACCO, L. 1948. Arachnida of British Guiana collected by Prof. Beccari. *Proceedings of the Zoological Society of London*, **118**: 607–747.
- CHAMBERLIN, R. V., AND W. IVIE. 1936. New spiders from Mexico and Panama. *Bulletin of the University of Utah, Biological Series*, **27**(5): 1–103.
- CHICKERING, A. M. 1954. The genus *Mangora* (Argiopidae) in Panama. *Bulletin of the Museum of Comparative Zoology*, **111**: 193–215.
- . 1963. Three new species of *Mangora* (Araneae, Argiopidae) from Central America. *Breviora, Museum of Comparative Zoology*, **191**: 1–11.
- CRAIG, C. L. 1987a. The significance of spider size to the diversification of spider-web architectures and spider reproductive modes. *The American Naturalist*, **129**: 47–68.
- . 1987b. The ecological and evolutionary interdependence between web architecture and web silk spun by orb web weaving spiders. *Biological Journal of the Linnean Society*, **30**: 135–162.
- . 1988. Insect perception of spider orb webs in three light habitats. *Functional Ecology*, **2**: 277–282.
- . 1989. Alternative foraging modes of orb web weaving spiders. *Biotropica*, **21**: 257–264.
- FRANGANILLO BALBOA, P. 1936. *Los Arácnidos de Cuba Hasta 1936*. La Habana, Cuba: Cultural S. A. 183 pp.
- GOODNIGHT, C. J., AND M. L. GOODNIGHT. 1953. The opilionid fauna of Chiapas, Mexico and adjacent areas (Arachnoidea, Opiliones). *American Museum Novitates*, **1610**: 1–81.
- HENTZ, N. M. 1847. Descriptions and figures of the Araneides of the United States. *Boston Journal of Natural History*, **5**: 443–478.
- KEYSERLING, E. 1881. *Neue Spinnen aus Amerika*. *Verhandlungen der K. K. Zoologisch-Botanischen Gesellschaft in Wien*, **30**: 547–582.
- . 1892–1893. *Die Spinnen Amerikas, Epeiridae*. Verlag von Bauer und Raspe, Nürnberg, **4**: 1–377.
- LEVI, H. W. 1975. The American orb-weaver genera *Larinia*, *Cercidia* and *Mangora* north of Mexico. *Bulletin of the Museum of Comparative Zoology*, **147**: 101–135.
- . 1991. The Neotropical and Mexican species of the orb-weaver genera *Araneus*, *Dubiepeira* and *Aculepeira* (Araneae: Araneidae). *Bulletin of the Museum of Comparative Zoology*, **152**: 167–315.
- . 2002. Keys to the genera of araneid orb-weavers (Araneae, Araneidae) of the Americas. *Journal of Arachnology*, **30**: 527–562.
- LUBIN, Y. 1978. Seasonal abundance and diversity of web-building spiders in relation to habitat structure on Barro Colorado Island, Panama. *Journal of Arachnology*, **6**: 31–51.
- PETRUNKOVITCH, A. 1909. A trip to southern Mexico for spiders. *American Museum Journal*, **9**: 245–256.
- . 1911. *Synonymic index—catalogue of spiders on North, Central and South America with all adjacent islands, Greenland, Bermuda, West Indies, Terra del Fuego, Galapagos etc.* *Bulletin of the American Museum of Natural History*, **29**: 1–791.
- PLATNICK, N. I. 2004. *The World Spider Catalog, Version 4.5*. American Museum of Natural History, <http://research.amnh.org/entomology/spiders/catalog/index.html>.
- REIMOSER, E. 1940 (1939). *Wissenschaftliche Ergebnisse der österreichischen biologischen Expedition nach Costa Rica*. *Annalen des Naturhistorischen Museum in Wien*, **50**: 328–386.
- ROEWER, C. F. 1942. *Katalog der Araneae von 1758 bis 1940*. Kommissions-Verlag von "Natura," Bremen, **1**: 1–1040.
- SCHARFF, N., AND J. CODDINGTON. 1997. A phylogenetic analysis of the orb-weaving spider family Araneidae (Arachnida, Araneae). *Zoological Journal of the Linnean Society*, **120**: 355–434.

- SCHENKEL, E. 1953. Bericht über einige Spinnentiere aus Venezuela. Verhandlungen der naturforschenden Gesellschaft, Basel, **64**: 1–57.
- SELANDER, R. B., AND P. VAURIE. 1962. A gazetteer to accompany the "Insecta" volumes of the "Biologia Centrali-Americana." American Museum Novitates, **2099**: 1–70.
- SIMON, E. 1895. Histoire Naturelle des Araignées. Librairie Encyclopédique de Roret, Paris, **1**(fasc. 4): 761–1084.
- SOARES, B. A. M., AND H. F. DE ALMAIDA DA CAMARGO. 1948. Aranhas coligadas pela Fundação Brasil-Central (Arachnida-Araneae). Boletim do Museu Paraense E. Goeldi, **10**: 355–409.
- TACZANOWSKI, L. 1874. Les Aranéides de la Guyane française. Horae Societatis Entomologicae Rossicae, St.-Petersbourg, **9**: 64–150.
- UNITED STATES BOARD ON GEOGRAPHIC NAMES. 1956, 1965. Gazetteer. United States Department of the Interior, Office of Geography, Washington, DC.
- VAURIE, C., AND P. VAURIE. 1949. Insect collecting in Guatemala 65 years after Champion. Journal of the New York Entomological Society, **57**: 1–18.

INDEX

Valid names are printed in italics. Page numbers refer to the main references, starred page number to illustrations.

- acalypha*, 142
acaponeta, 155*, 156
amchickeringi, 159*, 160
aragarcensis, 151
belligerens, 176
bimaculata, 175, 177*
calcarifera, 149*, 150
campeche, 166, 167*
candida, 170, 171*
chicanna, 172, 173*
conspicua, 162
corcovado, 177*, 179
craigae, 147, 149*
decora, 142
decolorata, 142
dentembolus, 151
distincta, 158, 159*
falconae, 177*, 178
fascialata, 162, 163*
fortuna, 166, 167*
gibberosa, 159*, 161, 163
goodnightorum, 167*, 168
itza, 154, 155*
ixtapan, 170, 171*
Mangora, 141
melanocephala, 151, 153*
mobilis, 155*, 156
mobilis, 160
montana, 146, 149*
nahuatl, 165, 167*
oaxaca, 163*, 165
passiva, 169, 171*
pia, 176, 177*
picta, 141, 148, 149*
picta, 151
placida, 163*, 164
pozona, 151
purulha, 173*, 174
rostrata, 169
schneirlai, 173*, 175
spiculata, 163*, 164
spinula, 151
striatipes, 162
sufflava, 172, 173*
trilineata, 148
vito, 167*, 168
volcan, 165, 167*
wiedenmeyeri, 176